A Buying Guide for

PITTSBURGH GLASS PRODUCTS

AND ACCESSORIES

PITTSBURGH PLATE GLASS COMPANY

A

Buying Guide for

PITTSBURGH GLASS PRODUCTS

and Accessories

PITTSBURGH
PLATE GLASS COMPANY

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INTROD

In the pages of this buying guide are described and illustrated all of the glass products of the Pittsburgh Plate Glass Company as well as glass products, tools and accessories not of our manufacture, but which are distributed by company-owned and operated branches and prominent glass jobbers located in principal cities of the United States.

It is intended that this buying guide will serve you by making available under one cover such facts and information as will help you in the selection and use of the types of glass best suited to your requirements. We believe you will find it useful as a catalog and reference manual to which you can turn for information on glass and the tools and accessories required for its proper installation.

One of the principal characteristics of modern progress has been the constant effort to improve working conditions and living conditions by the development of improved equipment and more desirable surroundings. This applies to factories where the efficiency of the worker is known to be influenced by lighting conditions, and by the cleanliness and appearance of working areas. It applies to commercial establishments where both the worker and the customer must be considered in terms of improved facilities. It applies to the home in terms of the ways and means of adding to the comfort and enjoyment of living. Glass, as much as any material, has been the means of making possible these improvements which are so much a part of modern civilization. For, glass combines usefulness with attractive appearance. It is an ideal material to work with wherever modernization is thought of, and for most of its uses, no other product can serve as well.

In the art of building, for example, glass is one material for which there can be no substitute. It is indispensable in its many scientific applications—for telescopes, microscopes, and other complicated instruments requiring the exact performance of glass. It fills commonplace uses and highly specialized needs, depending on the requirement for some one or all of the various properties which can be given to glass.

In no age has glass been more fully and consistently employed in a diversity of ways to fulfill the desires of decorators, both in the rendering of fixed decorations and in fashioning movable accessories. Perhaps no other product plays as important a part in the modern decorator's repertoire as mirrors in their variety of shapes, forms and colors.

Consistent progress has been made in the development of new glass products, which have greatly widened the sphere of the use of glass in building construction. And it is in the uses of glass, the ways in which each type of glass can be adapted successfully to new uses, that the greatest future development can be expected. For glass, which for so many years has had such a limited number of uses, has now come to be recognized as a versatile material suited to an almost unlimited variety of uses.

The Pittsburgh Plate Glass Company, as the largest manufacturer and distributor of flat glass products

U C T I O N

in the world, includes among its products all types of glass commonly used for glazing and decoration, as well as many special glasses for architectural and scientific purposes.

In more than half a century of glassmaking, we have developed the most modern and efficient production methods and machinery and have so integrated our facilities and operations that an unusually high standard of quality has been established in all Pittsburgh Glass Products.

In addition to large and well-assorted stocks of all types of glass, tools and accessories, trained and experienced sales personnel are prepared to supply recommendations concerning the proper glass products to use and the best methods of utilizing them in buildings, equipment, decoration, or for any of the many uses of glass. And for the unusual problems, where it is difficult to determine the proper glass to use and the best way to use it, you are invited to call upon the services of our staff of engineers for recommendations based on their long years of training and experience.

Competent estimators will be happy to submit estimates of cost and actual samples of our glass products. Experienced workmen are available for installation. Quotations will be submitted, upon request, covering both material and labor requirements.

One of the principal features of the extensive and diversified glass advertising programs carried on by this company is the stress given to educating the public in the many ways in which glass can be used to advantage. This informational advertising, which has been maintained over a period of years, has been the means of stimulating a constantly increasing public acceptance of glass as an ideal material to use for many structural and decorative purposes. It lends confidence to our belief in the active part glass will play in the field of construction and decoration in the future.

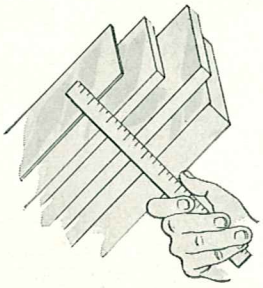
We earnestly request that you use this Pittsburgh Glass Buying Guide in the selection of glass products, accessories, and supplies needed for building construction, decoration, industrial and scientific purposes. Special booklets, specification sheets and details for installation are available and will be supplied promptly upon request. Prices have been omitted but are available in supplementary form. They may be obtained at any time from your source of supply.

We trust that we may continue to receive your valued patronage and will endeavor to show our appreciation by rendering the best possible service through the Pittsburgh Branch located near you, whether your requirements are for one light of glass or for a carload.

PITTSBURGH
PLATE GLASS COMPANY

CHARACTERISTICS OF "Pittsburgh" GLASS

Pittsburgh Glass is available in a wide range of thicknesses from .042 inch up to 1½ inches in single sheets. In laminated form, of course, even greater thicknesses are available.

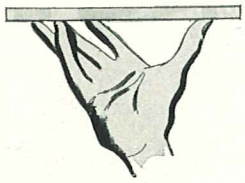


VARIETY OF THICKNESSES

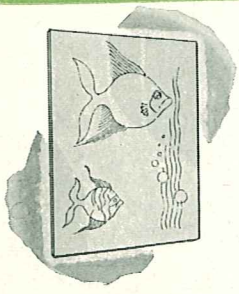
Mechanically ground and polished to a true flat surface, Pittsburgh Plate Glass is completely transparent. It affords perfect vision through it from any angle, whether used in thin plates or thick, in single sheet form or laminated with plastic. In window glass, Pittsburgh's Pennvernon affords an exceptionally high degree of transparency.

TRANSPARENCY

Of frequent interest to the product designer is the absolute flatness of Pittsburgh Glass. The grinding and polishing technique employed in its manufacture is so efficient that the run-of-mill finished glass has superlative trueness of surface.



FLATNESS

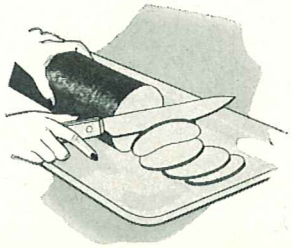


The surface of Pittsburgh Glass can be decorated by sandblasting, acid etching, mud grinding and honing, engraving, "Italian" processing, ceramic enameling, photo etching, chipping, and shading. It can be furnished with a brilliant, accurately reflective finish or with a softer "suede" finish.

DECORATIVE SURFACE TREATMENTS

Pittsburgh Glass is non-porous and non-absorptive, and has a hard, smooth, dense surface. It is, therefore, exceedingly sanitary, and easy to keep clean.

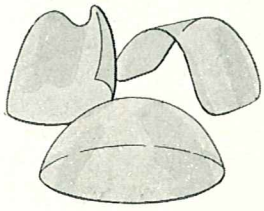
SANITATION



The surface structure of glass is hard, dense, smooth and brilliant. It is, therefore, exceptionally resistant to abrasion and surface scratches. Depending on the glass product, hardness ranges from 5.5 to 7 (Mohs' scale).

RESISTANCE TO ABRASION

In recent years, research and experimentation have resulted in advanced methods of bending and shaping glass. Shapes formerly thought impossible can now be achieved, both in single and laminated sheets of glass.

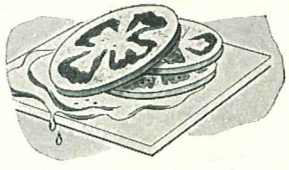


ADAPTABILITY TO BENDING

Pittsburgh Herculite Tempered Glass provides four to five times the protection against shattering found in ordinary untempered glass. And Pittsburgh Laminated Safety Glasses, ranging from ⅛ inch thicknesses up to the heavy bullet-resisting glasses, provide outstanding protection in a multitude of applications.

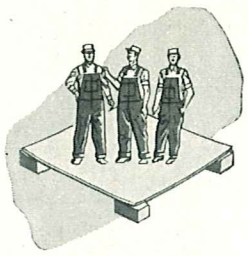
SAFETY

Glass is absolutely non-porous and non-absorptive. This means that acids, alkalis, chemicals, liquids of almost every kind affect it not at all . . . a valuable property in many product applications.

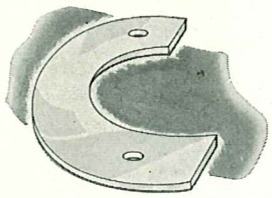


IMPERVIOUSNESS TO CHEMICALS

Characteristic of Pittsburgh Herculite Tempered Glass is its greatly increased toughness, strength, flexibility and resistance to shock and impact. Tempering makes glass approximately four times as strong and flexible as untempered glass, many times as resistant to shock. The tensile strength of tempered glass is 29,500 lbs. per sq. in. of cross section.



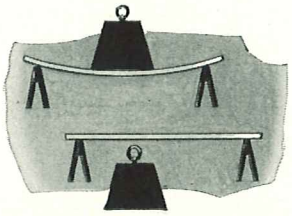
STRENGTH



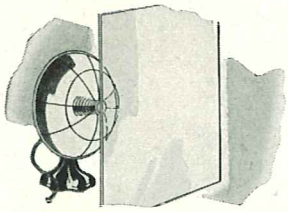
Pittsburgh Glass can be cut to pattern, drilled with holes, notched and edge-finished depending upon requirements. The fabrication possibilities of glass have developed with amazing rapidity in recent years.

FABRICATION

Although glass possesses surprising flexibility and elasticity, especially when tempered, it is fatigue-proof—that is, after being flexed, a light of glass always returns exactly to its original shape.



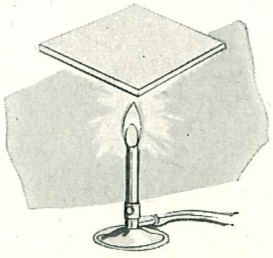
FATIGUE PROOF



Glass has lower heat transmission than most metals. Depending on the glass product, its thermal conductivity (K) at 120°F. ranges from 4.64 to 6.674 B.T.U. per square foot per hour per inch of thickness per degree F.

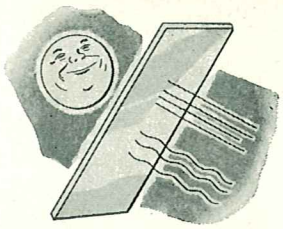
HEAT TRANSMISSION

The tempering process which gives glass its great strength also substantially increases its resistance to thermal shock. Thus, Pittsburgh Glass can be made to withstand continuous temperatures of 650°F. and an instantaneous thermal shock of 400° to 450°F.

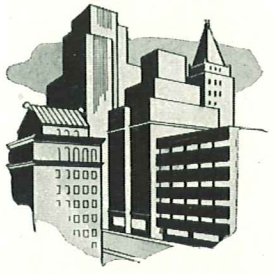


RESISTANCE TO THERMAL SHOCK

There is a Pittsburgh Glass that absorbs 55% of the total solar heat while transmitting 70% of the solar light. There are others which filter out a substantial portion of the sun's ultra-violet rays. Others which filter out infra-red rays.



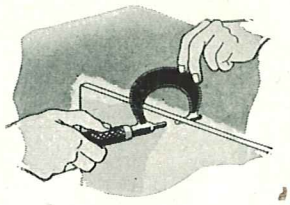
SOLAR PROPERTIES



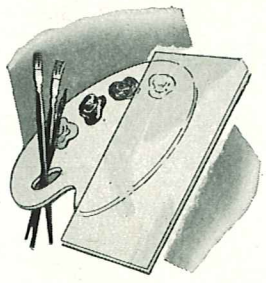
The physical characteristics of glass are such as to make it a durable, permanent material. Its resistance to abrasion, thermal shock, chemicals, fumes, fatigue, corrosion, etc., is now supplemented by its sheer strength and toughness achieved by tempering. Further, the colors in glass remain uniform and unfading year after year.

PERMANENCE

Glass has a very low coefficient of expansion. Depending upon what glass product is used, its coefficient of linear expansion ranges from (°C), 7.30×10^{-6} to 8.34×10^{-6}; (°F.), from 4.05×10^{-6} to 4.63×10^{-6}.



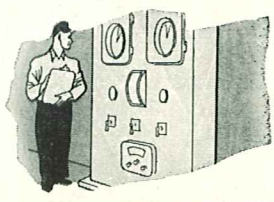
EXPANSION



Glass is available in a wide variety of attractive colors. Transparent plate glass is made in a soft, flesh tint, in rich blue, in cool green, in water white, as well as the ordinary color. Carrara Structural Glass comes in beige, ivory, tranquil green, gray, wine, forest green. Rembrandt blue, orange, black and white.

COLOR

Glass has unique dielectric properties. It is an inert material with high insulation value, making it ideal for many product applications involving electricity.



DIELECTRIC PROPERTIES

PITTSBURGH POLISHED PLATE GLASS

Polished plate glass, the aristocrat of the transparent flat glass family, is the finest material available for exterior and interior glazing and should be used wherever clarity of vision, beauty, and dignity are desired. It is a glass that is ground and polished, by precision methods, to a commercially true flat surface and a perfect brilliance and reflectivity of finish. Objects viewed through polished plate glass or reflected from it are undistorted in shape, form, and outline. It imparts to buildings in which it is used a brilliance and luster, a distinction and charm that enhances their appearance and adds immeasurably to their rental and sales value.

Used in Outstanding Installations

Wherever glass is used, the high quality of Pittsburgh Polished Plate Glass is known and recognized. It is a glass that finds extensive uses in every type of building for all glazing and decorative purposes. A list of the finest modern buildings constructed in the United States would be, to a large extent, a list of buildings in which some type of Pittsburgh Polished Plate Glass has been used.

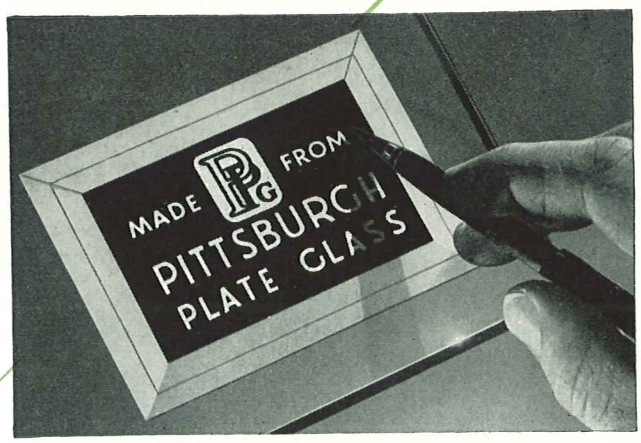
Specified by Leading Architects

The roster of America's outstanding architects is practically a roster of architects who have specified—and continue to specify—Pittsburgh Polished Plate Glass, not once, but again and again. This preference in the nation's finest building structures and the repeated specifications of this glass by architects whose reputations depend largely on their judgment of materials, is factual proof of the excellence and performance of Pittsburgh Polished Plate Glass.

Plate Glass Products

The name Pittsburgh Polished Plate Glass denotes not one product, but a large group of plate glasses, each one serving individually those particular uses for which its characteristics and properties are best suited. These plate glass products are:

$\frac{1}{8}''$, $\frac{13}{64}''$, $\frac{1}{4}''$ Plate Glass
Heavy Plate Glass
Blue and Flesh-Tinted Plate Glass
Water White Plate Glass
Crystalex Water White Plate Glass
Heat-Absorbing Plate Glass
X-Ray Lead Plate Glass
Herculite Tempered Plate Glass



Look for this label as your assurance of quality.

Pittsburgh stands for Quality Glass and Paints

POLISHED PLATE GLASS

1/8" - 13/64" - 1/4"

For All Types of Architecture

Polished plate glass in these standard thicknesses is adaptable to all types of architecture and to all decorative periods. It is the finest glass made for beauty and clarity of vision. Polished plate glass provides an undistorted view of outdoor scenes from any angle. It is a most satisfactory glazing material for picture windows as well as for a wide variety of commercial and industrial uses.

⅛" Thickness Used with Standard Sash and Sash Weights

This ⅛" polished plate glass has been developed to meet a specific need in the building industry . . . the need for a thin plate glass of top quality which could be used for general glazing, but which would be low enough in price to warrant wide use, and which could be glazed in the same sash and with the same sash weights required for ordinary window glass.

Wide Range of Applications

Polished plate glass is used for show windows, display cases and cabinets, and for almost innumerable other commercial and industrial applications. The display windows of store fronts require large areas of plate glass. It is used for interior partitions and panels in smart shops.

Polished plate glass offers many opportunities to dress up the home in addition to its superiority as a glazing material. Popular examples of some of these home-beautifying plate glass uses include table, vanity, and desk tops; shelves of every description; utility and ornamental screens, and many others.

RECOMMENDED USES

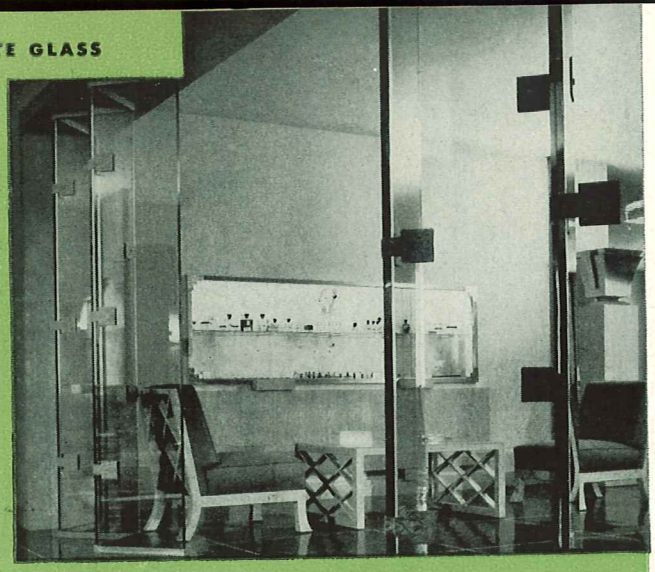
All types of glazing, interior decorative, and utility applications.

QUALITY	Silvering, Mirror-glazing, and Glazing Quality
THICKNESSES	⅛", 13/64", and ¼"
MAX. SIZE	⅛" 72" x 123" 13/64" 123" x 216" ¼" 160" x 220" and 150" x 260"
WEIGHT	⅛" 26-28 ounces per square foot 13/64" 2.91 pounds per square foot ¼" 3.29 pounds per square foot
SAMPLES	Furnished upon request.

"Open front" show windows like this display the entire store interior and promote increased sales.

Outdoor beauty is brought into the home with large plate glass "picture window" areas.

Used in showcases, polished plate glass provides true, undistorted view of merchandise on display.



An interesting idea in heavy plate glass partitions. Smart, practical and distinctly modern.

Shelves of heavy plate glass are useful and lend their attractiveness to the room decoration.

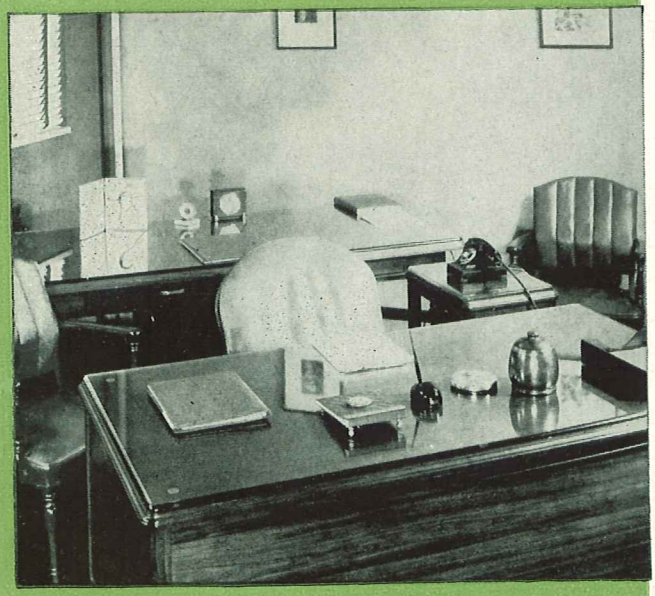


Table and desk tops of heavy plate glass protect surfaces, are dignified and impressive in appearance.

HEAVY PLATE GLASS

Practical Decorative Medium

Heavy plate glass is a material that has many applications in the fields of modern design and decoration. Only the imagination limits the possibilities for the effective use of this striking and distinctive glass.

Clear, Brilliant, Strong

Heavy plate glass is clear and affords excellent vision. It has brilliant and mirror-like smoothness of surface which only fine plate glass can offer. It is impervious to moisture, weather, cleaning chemicals, pencil marks and other disfiguring agents. It is easily cleaned. And above all, while possessing the strength that protects and endures, it also lends to the furniture or fixtures in which it is the dominant material a beauty, dignity and modern touch which perhaps no other medium can offer.

RECOMMENDED USES

Shelves	Wind Screens
Radio Acoustic Chambers	Bank Fixtures
Furniture Tops	Bapistry View Panels
Port Lights	Semi-enclosed Telephone Booths
Panels and Partitions	Aquariums
Glass Flooring	Aquatic Tanks

QUALITIES	Selected Quality and Commercial Quality
THICKNESSES	3/8", 1/2", 5/8", 3/4", 7/8", 1", and 1 1/4".
MAX. SIZES	3/8" to 1/2" 72"x160" 5/8" to 3/4" 72"x130" 7/8" to 1 1/4" 70"x130"
WEIGHT	3/8" 4.93 pounds per square foot 1/2" 6.58 pounds per square foot 5/8" 8.22 pounds per square foot 3/4" 9.67 pounds per square foot 7/8" 11.52 pounds per square foot 1" 13.16 pounds per square foot 1 1/4" 16.45 pounds per square foot
FINISH	Ground and Polished.
SAMPLES	Furnished upon request.

BLUE AND FLESH-TINTED PLATE GLASS

These popular types of polished plate glass find innumerable decorative uses. They combine the practical usefulness of plate glass with beautiful shades of color which blend harmoniously into almost any decorative color scheme.

Blue Plate Glass

This glass, of a rich blue color, presents an appearance of tasteful, dignified restraint. It is a glass that lends itself to the modern trend in interior design and decoration with unusual effectiveness.

When silvered, blue plate glass makes a most attractive mirror in demand as a decorative medium by those stores, restaurants, cafes, shops and other establishments where it is desired to create an impression of smartness and modernity.

Flesh-Tinted Plate Glass

In keeping with its name, flesh-tinted plate glass approximates in color the flesh tones of the skin. This warm and cheerful color makes the ideal glass for a wide variety of decorative uses.

When silvered, flesh-tinted plate glass makes highly decorative mirrors which emphasize the flesh color of persons reflected in it, giving them an appearance of excellent health. Used with great success in home decoration to add color, warmth and sparkle to all types of rooms, this mirror is also an ideal tool of the interior designer and decorator in creating striking, modern effects in such establishments as restaurants, cafes and bars . . . dress shops and cosmetic shops.

RECOMMENDED USES

Mirrors:
- Furniture Mirrors
- Decorative Wall Panel Mirrors
- Show Case Mirrors
- Plaque Reflectors
- Cabinet Lining
- Back Bars

Furniture Tops, both silvered and clear
Shelves
Sill Covers
Other decorative applications

QUALITY	Selected Quality only.
THICKNESS	Pittsburgh Flesh and Blue Tinted Plate Glass are manufactured in 13/64″ thickness only, with the usual tolerance of plus or minus 1/32″.
MAX. SIZE	123″ x 216″.
WEIGHT	2.67 pounds per square foot.
SAMPLES	Both clear and silvered samples furnished upon request.

A table top of tinted plate glass keynotes the finest in decorative appointments.

Shelves backed by a mirror of tinted plate glass are attractive and unusual.

WATER WHITE PLATE GLASS

Water white plate glass is colorless both in surface and in transverse section.

Faithful Transmission of Natural Colors

Since the transmission value of water white plate glass for all colors of the spectrum is very nearly uniform (88% to 92%), its transmission of the violet and blue light rays is much higher than that of ordinary plate glass. As a result, it is able to transmit the natural colors of merchandise seen through it very faithfully, without changing the relative intensities of colors, no matter how delicate the differentiation of tone and shade may be.

Water white plate glass is especially recommended for the glazing of show cases or display cases where it is essential that merchandise be seen in its actual, natural colors.

When silvered, this glass becomes the perfect mirror reflecting all objects with the greatest degree of accuracy. Because of this absolute trueness of color reflection, mirrors fabricated of water white plate glass are particularly ideal for use in those stores and shops which deal with wearing apparel.

Crystalex Water White Plate Glass

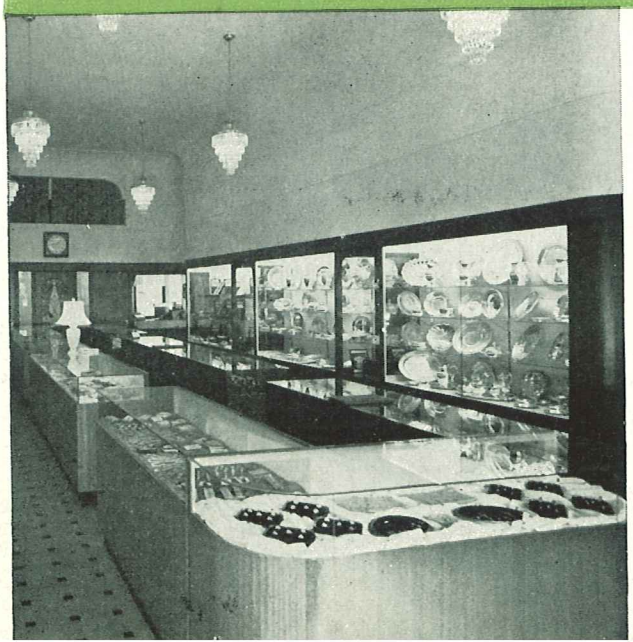
This special type of water white plate glass has been developed primarily for use in multiple-glazing, as in refrigerator cases; and in the double glazing of windows, for purposes of insulation and air conditioning. It is the only type of glass so far developed that prevents the formation of "bloom" which so frequently appears and interferes with visibility when ordinary plate glass is used in multi-glazing. It is important to distinguish between Crystalex and regular water white plate glass in ordering.

RECOMMENDED USES

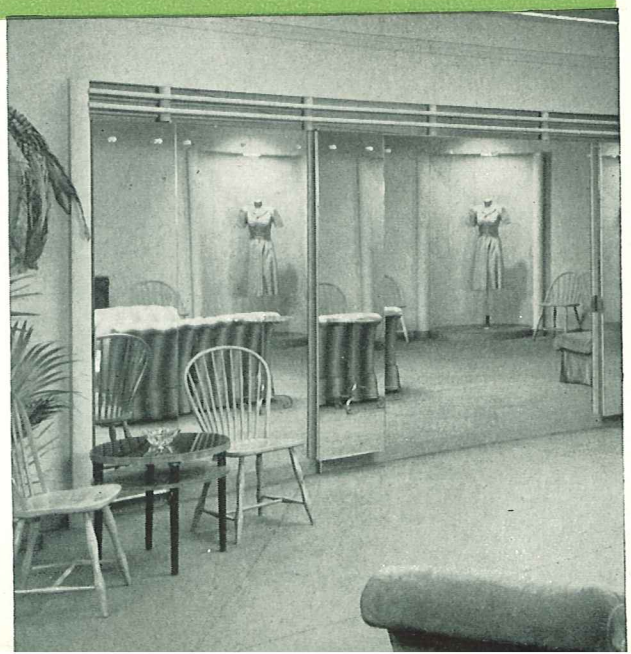
Museum Cases
Showcases
Double or Multiple-Glazed Units
Refrigerator Display Cases
Mirrors

QUALITIES	Silvering and Glazing Quality.
THICKNESS	Manufactured in ¼" thickness.
MAX. SIZE	123" x 216".
WEIGHT	3.29 pounds per square foot.
SAMPLES	Both clear and silvered furnished upon request.

Display cases fabricated of water white plate glass show the actual colors of the merchandise.



Water white plate glass mirrors are ideal for apparel shops, reflecting true color values accurately.



SOLEX (HEAT-ABSORBING) PLATE GLASS

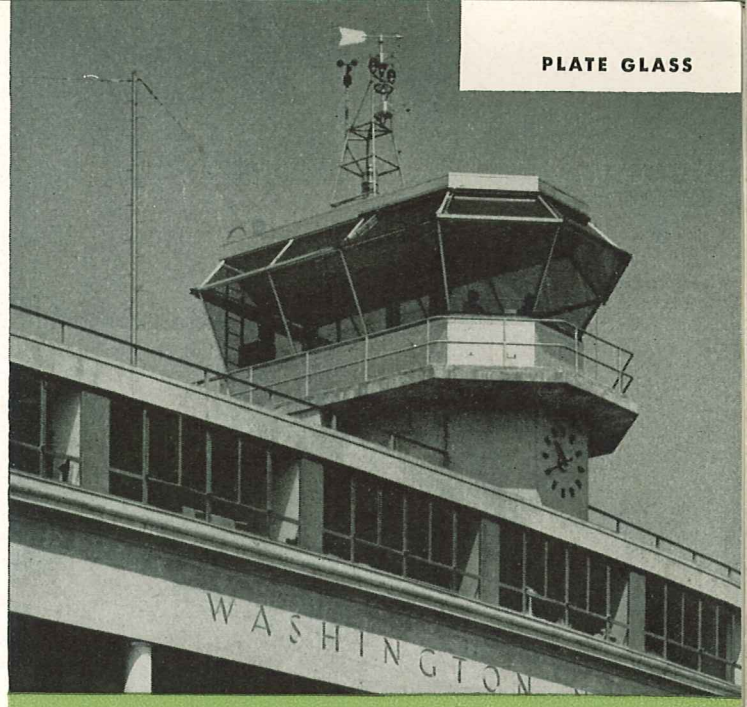
This glass was developed to answer the need for a plate glass which would reduce the annoying heat and brightness of the sun while permitting ample sunlight to enter a room.

Solex Glazed Rooms 10 to 20 Degrees Cooler

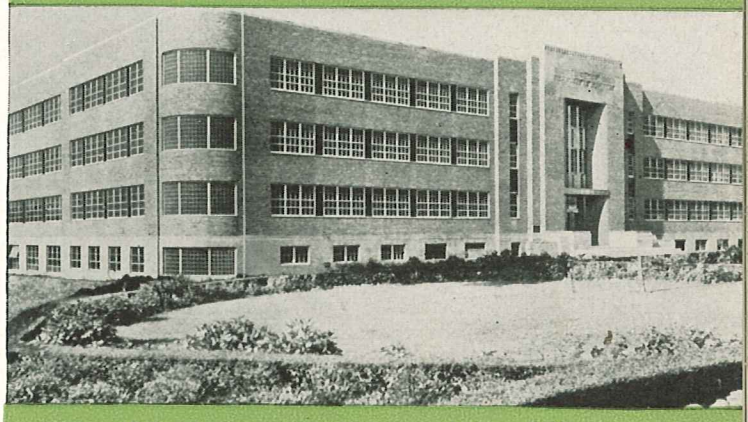
Solex Heat-Absorbing Plate Glass excludes 60 per cent of direct solar radiation, and at the same time, transmits more than 70 per cent of the total solar light. Rooms glazed with Solex run from 10 to 20 degrees cooler than if glazed with regular plate glass. And because of the lessened glare from light transmitted through the greenish tint of Solex, visibility of distant objects is actually increased.

Solex protects delicate electronic implements by reducing temperature variations which can be detrimental to the functioning of instruments used in radio transmitting and receiving. Solex reduces the possibility of colored fabrics fading or bleaching, for the sun's rays that enter an interior through this glass have little effect on chemicals or dyes.

When silvered, Solex Heat-Absorbing Plate Glass makes an unusual aquamarine mirror which lends itself to modern schemes of interior decoration.



Solex glazing in airports provides beauty, visibility, more uniform temperatures, and greater comfort.



Solex glazing reduces the heat and glare of direct sun rays, improves the efficiency of workers.

In climates where the sun is hot, windows glazed with Solex Plate Glass keep rooms cooler.

RECOMMENDED USES

Southern and Western Exposures of Buildings.....To avoid excessive heat and glare
Airport Control Towers.....For increased comfort and visibility
Factories .....Improved worker efficiency
Laboratories .....Permitting work by daylight without glare or excessive heat
Schools .....Less eyestrain, less glare and distraction, more comfort
Air-conditioning ..Reduces load on air-conditioning equipment and costs of operating
Solariums and Sunrooms...Made more comfortable and enjoyable

QUALITY Glazing Quality only.

TYPES AND THICKNESSES Solex made in 1/8", 1/4", and 3/8" should be designated as "Solex S" for 1/8" thickness, "Solex R" for 1/4" and 3/8" thicknesses. "Solex S" in 1/8" thickness is designed to have the same transmission values as "Solex R" in 1/4" thickness.

LIGHT TRANSMISSION Solex R in 1/4" thickness and Solex S in 1/8" thickness.

Total visible white light..70-75%
Total solar energy 35-45%
Total solar infra-red 11-17%
Total solar ultra-violet ..40-61%

MAX. SIZES
1/8"—123" x 216"
1/4"—123" x 216"
3/8"— 72" x 160"

WEIGHT
1/8"—1.75 pounds per square foot
1/4"—3.29 pounds per square foot
3/8"—4.93 pounds per square foot

SAMPLES Both clear and silvered Solex Plate Glass furnished upon request.

X-RAY LEAD PLATE GLASS

The Pittsburgh Plate Glass Company now offers a domestic source of supply for X-Ray Lead Plate Glass which meets in every respect the requirements of various governmental departments. Pittsburgh X-Ray Lead Plate Glass was developed primarily to protect operators and their assistants against continuous exposure to X-Rays. While affording protection, the glass also allows clear vision of the X-Ray apparatus and patient. Pittsburgh X-Ray Lead Plate Glass may be used both for interior and exterior glazing.

At the present time the Pittsburgh Plate Glass Company is the only domestic producer of X-Ray Lead Plate Glass, and the quality of our product is exceptionally high. Our information leads us to believe that none of the foreign glass usually imported into this country has a lead coefficient which approaches that of our product.

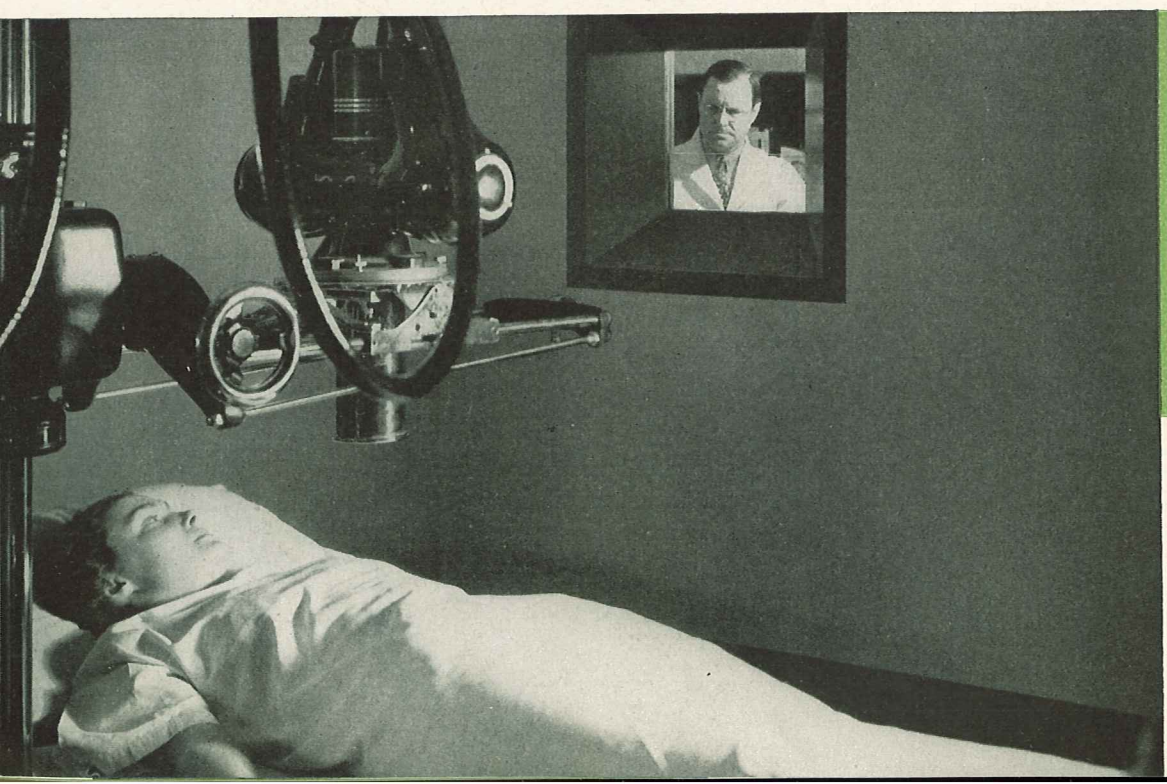
Pittsburgh X-Ray Lead Plate Glass is a very technical, highly specialized product, and while regularly sold in the form of a ground and polished plate, it is considerably more difficult and expensive to produce than are most of the other glasses. It is used in X-Ray projection rooms, as windows through which the X-Ray operator may observe his patient and make photographs, while being himself adequately protected from the X-Ray emanation. The walls, floors, and ceilings of X-Ray projection rooms are usually sheathed in metallic lead of adequate thickness to prevent the penetration of X-Rays of the maximum intensity of which the X-Ray machine is capable. It is essential that the X-Ray Lead Plate Glass used in the windows shall offer sufficient protection. The lead glass produced by the Pittsburgh Plate Glass Company has a lead content of approximately 61%, and a lead equivalent value of .32 as determined by the U. S. Bureau of Standards.

PROPERTIES

The index of refraction of X-Ray Lead Plate Glass is very high at 1.7608. (This value is exceptionally high for glasses and is quoted here for that reason.)

Coefficient of linear expansion ----------
(°C), 7.30 x 10^{-6}, (°F.) 4.05 x 10^{-6}.
Softening point ----------1155° F.
Lead Equivalent (at 100 K.V.),
guaranteed minimum ----------0.30.
Light transmission, ¼" thick
Total visible white light ----------0.86.
Thermal conductivity (K) at 120°F. ----------
4.64 (B.t.u./sq. ft./hr./inch of thickness/degree F.
Modulus of rupture -5,000 lbs. per sq. in. cross section.
Modulus of elasticity ----8,000,000 lbs. per sq. inch
Specific heat (0-100°C.; 32°—212°F.) ------0.093.
Specific gravity (70°F.) ----------4.879

QUALITY	Glazing Quality only.
THICKNESS	Produced in one thickness only, 5.35 to 7.35 mm., which is equivalent to at least 1/16" sheet lead at 100 K. V.
MAX. SIZE	40" x 72".
WEIGHT	5.5 pounds per square foot.
COLOR	Golden Yellow.
FINISH	Ground and Polished.
STRENGTH	Approximately two-thirds as strong as plate glass of equal thickness.
SAMPLES	Furnished upon request.



Allows clear vision of the X-Ray apparatus while protecting operator against exposure to X-Rays.

HERCULITE TEMPERED PLATE GLASS

Herculite is polished plate glass which has been specially processed by heat and chilling. Note: The tempering process can also be applied to Carrara Structural Glass with similar results.

Strength and Shock Resistance

Herculite is approximately four times as strong and flexible as ordinary plate glass. It is six times more resistant to impact.

Unaffected by Varying Surface Temperatures

Herculite is not affected by varying surface temperatures, being able to stand, without breaking, a temperature of 650 degrees F. on one surface, while the other is at ordinary atmospheric temperature. It resists shocks and impacts as well at 15 degrees below zero F. as at ordinary temperatures.

Shattering Qualities

When Herculite, under terrific impact, does shatter, it does not break into sharp fragments like ordinary glass, but disintegrates into innumerable small fragments which are comparatively blunt edged.

Fabrication

All fabrication of the glass must be done in the factory before tempering. The glass can not be worked or cut in the field.

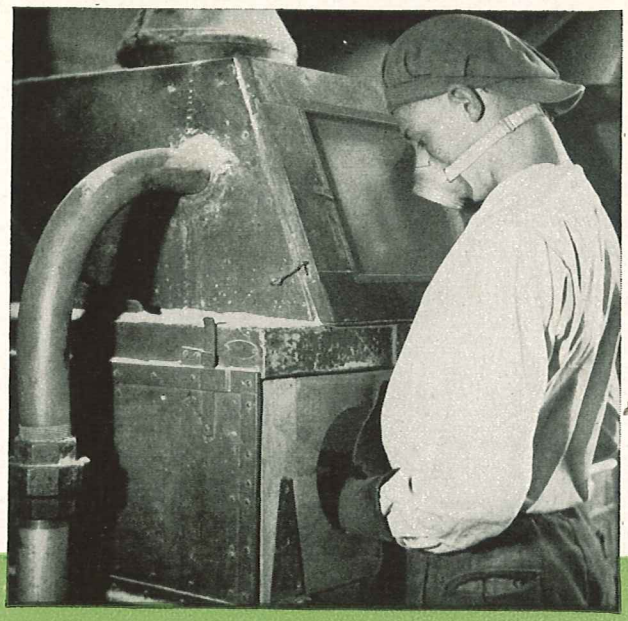
RECOMMENDED USES

Tanks (see section on Glass Tanks)	Laboratory Equipment
Doors (see section on Herculite Doors and Panels)	Partitions
Observation Windows	Shelves
Machine Guards	Traffic Signs
Safety Shields	Showcases
Cell Doors	Kitchen Table Tops
Fire Screens	Kitchen Work Surfaces
	Industrial Work Surfaces
	Gas Cooker Doors

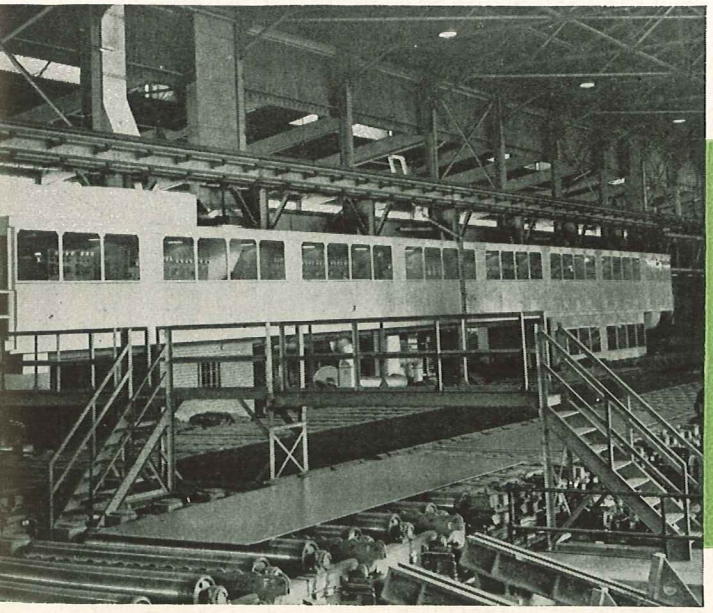
Dresser and Table Tops

THICKNESSES From ¼" to 1¼"

MAX. SIZE 72" x 108"



Safety Shields of all kinds for numerous industrial applications are now being made of Herculite Tempered Plate Glass, both in single sheet form and laminated with plastic. Tempered glass provides protection for the worker as well as clear vision.



¼" Herculite tempered plate glass used in Control House No. 3 at 120" mill, Lukens Steel Company, Coatesville, Penna.

Cut down breakage, reduce costs in hotels, clubs, commercial buildings with dresser and table tops of Herculite Tempered Pittsburgh Glass. Its strength and impact resistance, coupled with its good looks, make this tempered glass ideal for this purpose.

PITTSBURGH MIRRORS

Pittsburgh Mirrors are available for every structural and decorative purpose. Whether used structurally in a building, or as purely decorative media, Pittsburgh Mirrors are of consistently high quality and afford superior reflectivity.

In line with the recent trend toward the wider use of mirrors, both structural and framed, and the increasingly important part played by mirrors in design and decoration, the Pittsburgh Plate Glass Company has developed a wider selection of glass colors, and mirror backings than ever before. Consequently, the architect and designer can today create new and interesting effects with mirrors.

Colors Available

All Pittsburgh Mirrors are available made from regular polished plate glass. But for the achievement of striking and unusual effects, Pittsburgh Mirrors may also be obtained made from blue, flesh-tinted or green (Solex) plate glass. Furthermore, these various colors of glass may be treated to additional tone mutations by the backing used in fabricating them into mirrors. The regular silver backing is, of course, available, and in addition, a beautiful gold backing, and a smart gunmetal backing.

Pittsburgh Copper Back Mirrors

For maximum protection against moisture and other unfavorable atmospheric conditions, a layer of pure metallic copper is electroplated over a heavy film of silver in producing the Pittsburgh Copper Back Mirror. This process is applied only to silvered mirrors—not to those with gunmetal or gold backing.

For structural uses where mirrors are permanently affixed to the wall surface, it is particularly essential that they be copper backed in order to give maximum service. An additional protective coating is given to Pittsburgh Copper Back Structural Mirrors which are to be installed with mastic.

Resilvering

Mirrors are resilvered by removing the old silver and applying a new film. Resilvering is not recommended if the surface of the glass is badly scratched.

When sending mirrors to us for resilvering, remove from the frame and forward only the mirror, carefully packed. If it is necessary to forward the frame also, the mirror should be removed and the frame and mirror packed separately to insure safe delivery. Resilvering is done at customer's risk of breakage both in transit and in process.

All mirrors made from genuine Pittsburgh Plate Glass bear this label.

Types of Pittsburgh Mirrors:

STRUCTURAL MIRRORS · WALL AND MANTEL MIRRORS · DOOR MIRRORS

PITTSBURGH STRUCTURAL MIRRORS

Structural mirrors are an ideal tool of the architect and decorator in creating unusual and striking effects. Structural mirrors serve to create an illusion of spaciousness, making narrow rooms seem wider and small rooms larger. They provide a means of achieving smart and modern decorative schemes in keeping with both commercial and residential requirements.

Installation

Pittsburgh Structural Mirrors are installed with clips, mirror mastic, rosettes or moldings. For most satisfactory results, it is always essential that the wall upon which a structural mirror is to be mounted be made absolutely flat and plumb. It is also advisable to avoid installing a structural mirror on a plaster wall until the plaster has "set."

Colors and Backings Available

Pittsburgh Structural Mirrors are available made from regular plate glass, or from blue, flesh-tinted, green (Solex), water white or (Crystalex) water white plate glass. They can be obtained with silver, gold, or gunmetal backing as desired. Unless otherwise specified, all Pittsburgh Structural **Silvered** Mirrors are copper backed for maximum service and durability.

RECOMMENDED USES

Structural mirrors have an almost unlimited field of uses for both commercial and residential decoration. Their lovely, reflective beauty adds life and sparkle to the rooms in which they are used. Structural mirrors are used to cover entire wall areas of modern shops and stores. They are used for back bars in restaurants, cafes, and bars and may be applied even to the ceiling where unusual effect is desired. Their rich elegance and simplicity lends invitation and dignity to the living room, dining room, hallway, or bedroom. Structural mirrors combine all the advantages of mirrors with complete adaptability to use in whatever way, shape, or form may be desired by the decorator or designer.

QUALITIES **Silvering**—used only for the finest mirrors.
Mirror Glazing—used for all types of selected mirrors.
Glazing—used for all other plate glass mirrors which are "commercial" mirrors.

MAX. SIZES When made from regular polished plate glass ----------150" x 260".
When made from heavy plate glass ---------- 72" x 160".
When made from Crystalex, blue, or flesh tinted -------- 72" x 123".

THICKNESSES Pittsburgh Structural Mirrors may be obtained in thicknesses up to 1¼" when fabricated from untinted plate glass. When colored plate glass is used in fabricating mirrors, however, the maximum thickness of the glass available determines the maximum thickness of the colored mirrors.

WEIGHT Approximately the same as the glass from which the mirrors are made.

EDGEWORK & FABRICATION All edgework, mitering, and drilling of mirrors is done prior to silvering.

The last word in good taste, dignity, and attractiveness.

Mirror panels on the wall serve to increase the apparent size of the room, and reflect its activity.

Colonial Girondole and other authentic period designs.

Venetian mantel mirrors—inexpensive, easy to hang, and available in a wide range of sizes.

What better place for a mirror than in the kitchen.

WALL AND MANTEL MIRRORS

Framed and Venetian Mirrors

Included in the category of Pittsburgh Wall and Mantel Mirrors are both framed and Venetian mirrors, which are available in a wide range of sizes, types, and shapes to suit every need. A separate catalog showing the complete line of these mirrors can be obtained, upon request, from any of our branch offices.

Ready to Hang

An important and practical feature of these mirrors is that they can be hung with wire from a hook on the wall, just as a picture is hung. A wood or composition board backing on which the Venetian mirrors are mounted with clips or rosettes makes it possible to hang these mirrors as easily as the framed type.

RECOMMENDED USES

Whether it be for living room, dining room, hallway—or for those places where structural mirrors cannot be used, there are framed or Venetian Pittsburgh Mirrors to suit every purpose. Their lovely perfection and reflective beauty is an inspiration and source of pleasure wherever used.

The use of mirrors above the mantel has gained such acceptance with decorators and home owners as well, that it is common practice to describe mirrors for this purpose as "mantel mirrors." Although framed mirrors are often used above the mantel, there is an increasing tendency to consider the Venetian mirror as being best suited for this use, inasmuch as this type of mirror fits in with any decorative scheme, be it modern or period.

QUALITY Supplied in commercial quality.

THICKNESSES 13/64 inches and ¼ inch.

COLOR Unless otherwise specified, supplied in standard clear plate glass. Available also in blue, flesh-tinted or green (Solex) plate glass.

EDGEWORK AND DECORATION All utility mirrors supplied complete with necessary edgework and hardware ready to hang.

MAX. SIZES

(1) Framed mirrors
Overall size, 52″ x 38″.
Mirror size, 44″ x 30″.

(2) Venetian mirrors
Mounted on wood or masonite-type backs, 46″ x 40″.

DOOR MIRRORS

Framed Door Mirrors

These are plate glass mirrors framed with wood molding ready to install on the door with a few screws. Frame is of poplar wood, well constructed, and finished in two-tone ivory enamel or unfinished if desired.

Unframed Venetian Door Mirrors

These are plate glass mirrors with polished exposed edges which are installed with metal or plastic clips or clamps held in place by screws into the face of the door.

Measurement of Door Mirrors

Each door mirror is made up to the exact size to fit the existing door. In measuring for proper size to fit your door, allow room for the mirror to overlap beyond the edge of the recessed panel in the door (if any) on all four sides at least ⅜". This is a minimum requirement. Your door mirror may be as much larger than this as desired, the only limitation being that the final overall size should allow for proper operation of hinges and door hardware.

How to Order Door Mirrors

1. State whether two-toned ivory finished framed, unfinished framed, or unframed is desired.

2. Check the size of the door and order a standard size "on-a-door mirror" by number if your door fits the description and measurements. If your door is a special size, send us the overall dimension of the mirror.

Below is a list of regular size doors with stock number applying to the mirror to fit each standard type door of each size:

FOR TYPE "A" DOORS

(Have stiles and top rail 4 9/16" wide and bottom rail 9⅜" wide.)

STOCK NUMBERS FRAMED	STOCK NUMBERS VENETIAN	SIZE OF DOOR	OVERALL SIZE
10-A	50-A	2- 0 x 6- 0	16½ x 59¾
11-A	51-A	2- 0 x 6- 6	16½ x 65¾
12-A	52-A	2- 0 x 6- 8	16½ x 67¾
13-A	53-A	2- 0 x 6-10	16½ x 69¾
14-A	54-A	2- 0 x 7- 0	16½ x 71¾
15-A	55-A	2- 2 x 6- 8	18½ x 67¾
16-A	56-A	2- 4 x 6- 8	20½ x 67¾
17-A	57-A	2- 6 x 6- 6	22½ x 65¾
18-A	58-A	2- 6 x 6- 8	22½ x 67¾
19-A	59-A	2- 6 x 6-10	22½ x 69¾
20-A	60-A	2- 6 x 7- 0	22½ x 71¾
21-A	61-A	2- 8 x 6- 8	24½ x 67¾
22-A	62-A	2- 8 x 6-10	24½ x 69¾
23-A	63-A	2- 8 x 7- 0	24½ x 71¾
24-A	64-A	2-10 x 6-10	26½ x 69¾
25-A	65-A	2-10 x 7- 0	26½ x 71¾

FOR TYPE "B" DOORS

(Have stiles 4 9/16" wide, top rail 5⅜" wide and bottom rail 11⅜" wide.)

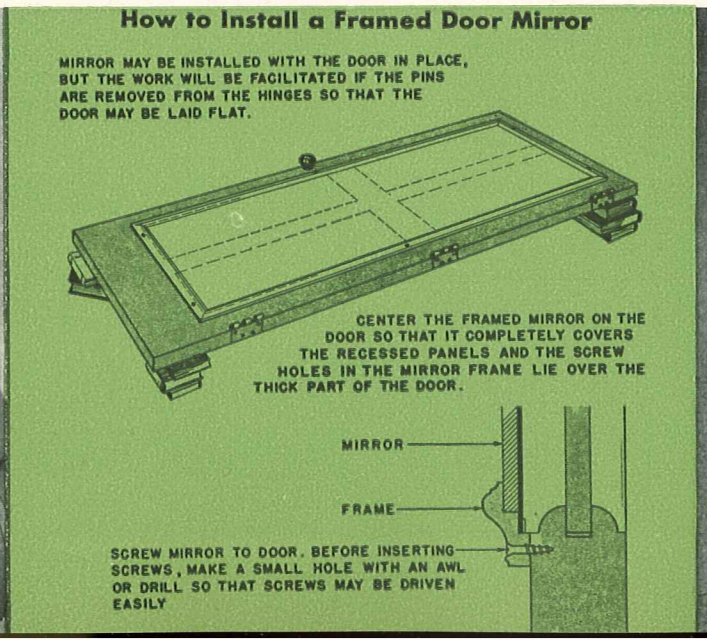
STOCK NUMBERS FRAMED	STOCK NUMBERS VENETIAN	SIZE OF DOOR	OVERALL SIZE
26-B	70-B	2- 0 x 6- 0	16½ x 57
27-B	71-B	2- 0 x 6- 6	16½ x 63
28-B	72-B	2- 0 x 6- 8	16½ x 65
29-B	73-B	2- 0 x 6-10	16½ x 67
30-B	74-B	2- 0 x 7- 0	16½ x 69
31-B	75-B	2- 2 x 6- 8	18½ x 65
32-B	76-B	2- 4 x 6- 8	20½ x 65
33-B	77-B	2- 6 x 6- 6	22½ x 63
34-B	78-B	2- 6 x 6- 8	22½ x 65
35-B	79-B	2- 6 x 6-10	22½ x 67
36-B	80-B	2- 6 x 7- 0	22½ x 69
37-B	81-B	2- 8 x 6- 8	24½ x 65
38-B	82-B	2- 8 x 6-10	24½ x 67
39-B	83-B	2- 8 x 7- 0	24½ x 69
40-B	84-B	2-10 x 6-10	26½ x 67
41-B	85-B	2-10 x 7- 0	26½ x 69

FOR TYPE "C" DOORS

(Have stiles and top rail 5⅜" wide and bottom rail 11⅜" wide.)

STOCK NUMBERS FRAMED	STOCK NUMBERS VENETIAN	SIZE OF DOOR	OVERALL SIZE
42-C	90-C	2- 0 x 6- 0	15 x 57
43-C	91-C	2- 0 x 6- 6	15 x 63
44-C	92-C	2- 0 x 6- 8	15 x 65
45-C	93-C	2- 0 x 6-10	15 x 67
46-C	94-C	2- 0 x 7- 0	15 x 69
47-C	95-C	2- 2 x 6- 8	17 x 65
48-C	96-C	2- 4 x 6- 8	19 x 65
49-C	97-C	2- 6 x 6- 6	21 x 63
50-C	98-C	2- 6 x 6- 8	21 x 65
51-C	99-C	2- 6 x 6-10	21 x 67
52-C	100-C	2- 6 x 7- 0	21 x 69
53-C	101-C	2- 8 x 6- 8	23 x 65
54-C	102-C	2- 8 x 6-10	23 x 67
55-C	103-C	2- 8 x 7- 0	23 x 69
56-C	104-C	2-10 x 6-10	25 x 67
57-C	105-C	2-10 x 7- 0	25 x 69

With a full-length door mirror you can see yourself as others see you.



Full-length door mirrors for little ones and grown-ups as well.

PENNVERNON WINDOW GLASS

Pennvernon Window Glass represents an extraordinarily high development in sheet glass making. This glass is manufactured by a special process, in which it is drawn vertically and held absolutely flat from molten state to finished sheet. During the drawing process, no rolls or foreign substances of any kind touch the surface of the glass until it has cooled sufficiently to be beyond injury. Consequently, Pennvernon has an unusually brilliant, reflective, and unmarred surface finish on both sides of the sheet.

Advantages

Other superior qualities distinguish this fine window glass, too. Because it is made only from the purest and most carefully selected ingredients, it is remarkably transparent and retains its clarity indefinitely.

Qualities

Pennvernon is graded at the factory by experts in accordance with the high standards of the Pittsburgh Plate Glass Company, and a label indicating quality is affixed to each light as follows:

AA—This is the best quality of window glass obtainable. Because it is graded above commercial requirements, it is available only in limited quantities and is priced accordingly.

A—The highest grade of window glass for commercial uses. Contains no imperfections that can perceptibly interfere with straight vision.

B—Window glass free from noticeable defects, but containing imperfections which prohibit its being graded as "A" quality.

Packing

Pennvernon Window Glass is packed with a sheet of special type separator paper between each light to prevent scratching, marring, or staining. Lights are then placed in a specially constructed corrugated carton, which is safe and convenient to handle. This carton is inserted for shipment in a sturdy, lightweight wood crate, upon which the Pennvernon trade-mark always appears for easy identification.

Pennvernon Sheet Glass Products

Picture Glass
Single Strength Window Glass
Double Strength Greenhouse Glass
Heavy Sheet Glass

Also, Window Glass can be furnished in the following types:

Bent Glass Ground Glass
Chipped—Single and Double Process Glass

Look for this label as your assurance of quality.

A quality sheet glass for general glazing purposes

PENNVERNON
picture · single strength
double strength

Picture Glass

Pennvernon Picture Glass is a thin sheet glass especially made and graded for picture framing and can be used even in the lightest molding.

QUALITIES	A—Recommended for use in framing where highest quality results are required. B—Recommended for commercial quality framing.
THICKNESS	Approximately 1/16" (.062-.070)
MAX. SIZE	36" x 50".
WEIGHT	14 oz. per square foot---------- ------48 lbs. per 50 square foot box.
SAMPLES	Furnished upon request.

Single Strength Window Glass

Pennvernon Single Strength Glass conforms to the highest standards of quality. Architects everywhere specify this glass for glazing purposes owing to its excellent clarity and luster. Also, being lighter in weight and thinner than other Pennvernon Window and Sheet Glasses, the single strength thickness costs less.

Single strength is recommended for the glazing of window areas subject to normal exposure, wind pressure, or shock. For more severe conditions, heavier thicknesses of Pennvernon are recommended.

RECOMMENDED USES

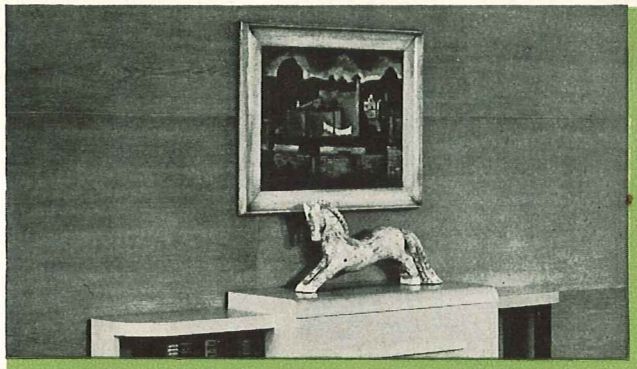
	General Glazing	Mirrors (Shock)
	Hotbed Sash	Cabinets
	Cold Frames	Clock Dials
	Storm Windows	
	Advertising Novelties and Displays	
QUALITIES	AA, A, and B.	
THICKNESS	Approximately 3/32" (.087-095).	
MAX. SIZE	40" x 50".	
WEIGHT	18 oz. per square foot ---------- ----70 lbs. per 50 square foot box.	
SAMPLES	Furnished upon request.	

Double Strength Window Glass

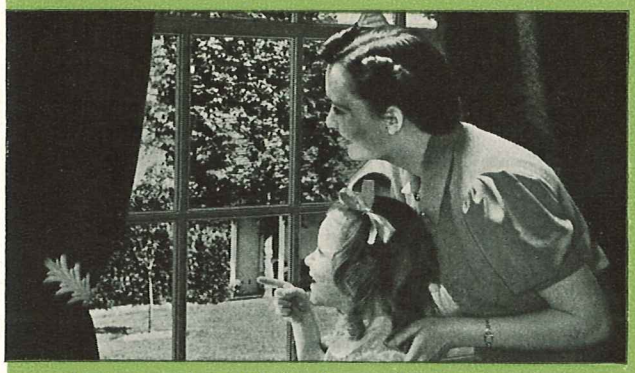
This glass is stronger and more resistant to breakage than single strength and accordingly is recommended for the glazing of larger window openings or where there is likelihood of strong wind pressure or shock.

RECOMMENDED USES

	General Glazing	Doors
	Mirrors (Shock)	Showcases
	Solariums	Novelties
QUALITIES	AA, A, and B.	
THICKNESS	Approximately 1/8" (.118-.133).	
MAX. SIZE	60" x 80".	
WEIGHT	26 oz. per square foot. Sizes up to and including 100 united inches are packed in boxes containing 50 square feet and weighing approximately 90 lbs. Sizes over 100 united inches are packed in boxes containing 100 square feet and weighing approximately 175 lbs.	
SAMPLES	Furnished upon request.	



Fine pictures deserve especially made picture glass.



Pennvernon is noted for its sparkling surfaces and unusually true light transmission.

Windows glazed with Pennvernon are brilliant, clear and remarkably transparent.

PENNVERNON GLASS FOR GREENHOUSES, HOTBEDS, COLDFRAMES

Pennvernon Glass for Greenhouses

This double strength sheet glass is especially selected and graded for indoor growth of plants. It is a glass—made from quality ingredients—that is specially selected to eliminate shiny seeds and blisters that might concentrate the rays of the sun and burn the leaves of the plants.

QUALITY	Greenhouse.
THICKNESS	Approximately 1/8".
SIZES	16" x 18", 16" x 24", and 18" x 20".
WEIGHT	26 oz. per square foot ---------- ----90 lbs. per 50 square foot box.
SAMPLES	Furnished upon request.

Coldframes are similar to hotbeds, except that the only heat they receive is from direct sunlight through the glass covering. Coldframes are used to harden off plants grown in hotbeds and also to permit the start of plants several weeks in advance of outdoor planting.

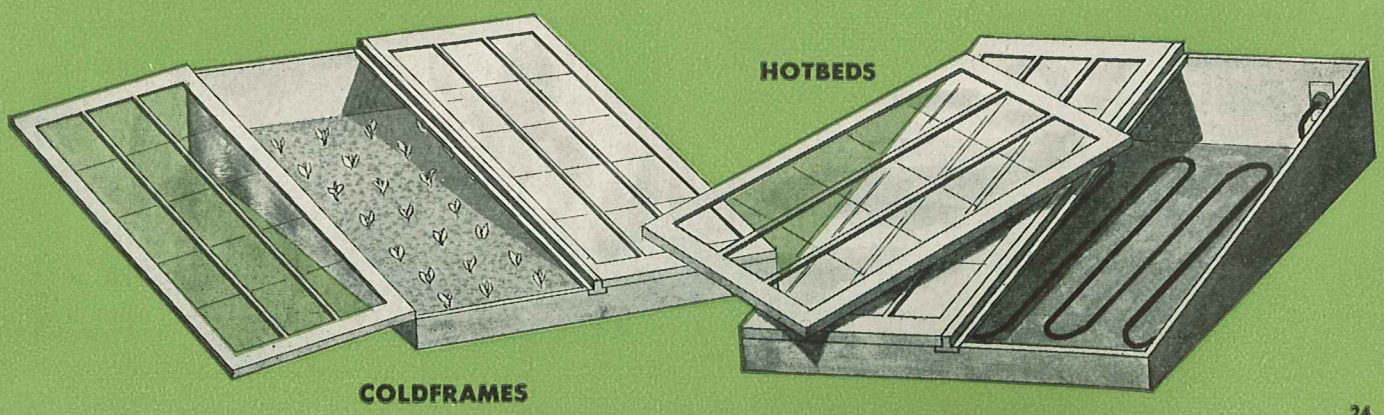
THICKNESS	Single Strength or Double Strength.
SIZE	The standard size for hotbed and coldframe use is 6" x 8", packed 150 lights per box.
SAMPLES	Furnished upon request.

Pennvernon Glass for Hotbeds and Coldframes

These special uses of Pennvernon Single and Double Strength Glass are worthy of further description.

Hotbeds are frames or boxes with a transparent glass covering which are used to start plant growth as much as two months before planting would be possible outdoors. Hotbeds are artificially heated by electricity, steam, hot air, hot water, or by a bottom bed of manure. Pennvernon Glass is ideal for hotbed use since it transmits ample sunlight to the growing plants beneath.

Growing plants under Pennvernon Glass is almost like growing plants outdoors.



PENNVERNON GLASS FOR STORM WINDOWS

Because of its clarity and high quality, Pennvernon Single Strength Sheet Glass is especially recommended for use in storm sash. The two thicknesses of glass naturally emphasize imperfections and thus it is doubly important that the best quality be used.

Increased Comfort and Fuel Saving

Storm windows save up to 45 per cent in fuel costs. They practically eliminate condensation on the inside of window panes. Their effective insulation does away with drafts and cold spots, and keeps rooms far more comfortable and livable during cold months. Uniform, even temperatures are easily maintained in rooms having the protection of storm windows which are truly as important in the winter as are screens over the windows in summer.

Easily Installed

All houses, new or old, that have "double-hung" windows, the kind that slide up and down, can have storm windows by adding storm sash on the outside. They are constructed like full-length screens and are hung at the top from the same hardware used to support full-length screens. A simple hinged bracket fastened to the window frame holds the storm sash open when ventilation is desired on warm days. Also specially designed storm sash are available for casement or hinged windows.

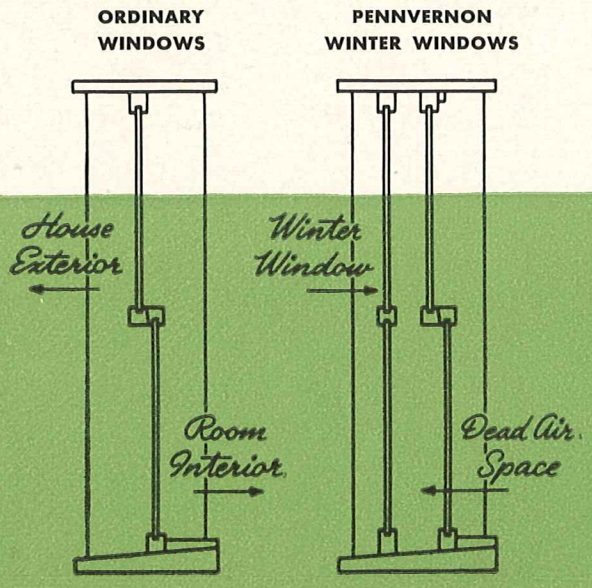
Where to Obtain

Most suppliers of building materials maintain adequate stocks of storm sash. We will be glad to render assistance to those who desire to install storm sash by recommending a reliable source of supply.

AVERAGE FUEL SAVINGS USING STORM WINDOWS

	Type of home	Savings
1	Extremely well insulated brick structure	**Up to 35%**
2	Well insulated frame home	**20% to 35%**
3	Average home with weather-stripped windows	**20% to 30%**
4	Inexpensive, uninsulated unweather-stripped home	**15% to 20%**

Easily installed—costs no more than screens.

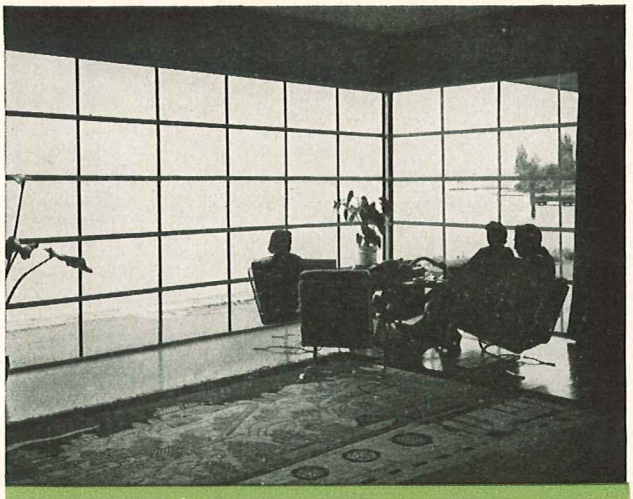


PENNVERNON HEAVY SHEET GLASS

Pennvernon Heavy Sheet Glass has long been recognized for its transparency, uniformity, and bright reflective finish on both sides of the sheet. It is remarkably free from distortion and waves which so often mar ordinary heavy sheet glass.

Strong and Permanent

Pennvernon Heavy Sheet Glass is sold at a small increase in cost over that of double strength glass. It is recommended for general glazing where wind pressure, shock, or other hazards might cause thinner glass to break. This glass is especially suited for glazing large window areas where wind pressure is usually a factor to be considered.



Large window areas need glass heavy and strong enough to withstand severe wind pressure.

RECOMMENDED USES

General Glazing	Window Ventilators
Mirrors (Shock)	Pin-ball Cabinets
Fixed Partitions	Solariums
Showcases	Wind Screens
Shelves	Store Fixtures

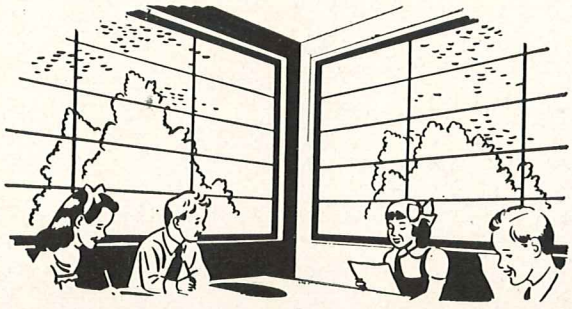
QUALITIES AA, A and B.

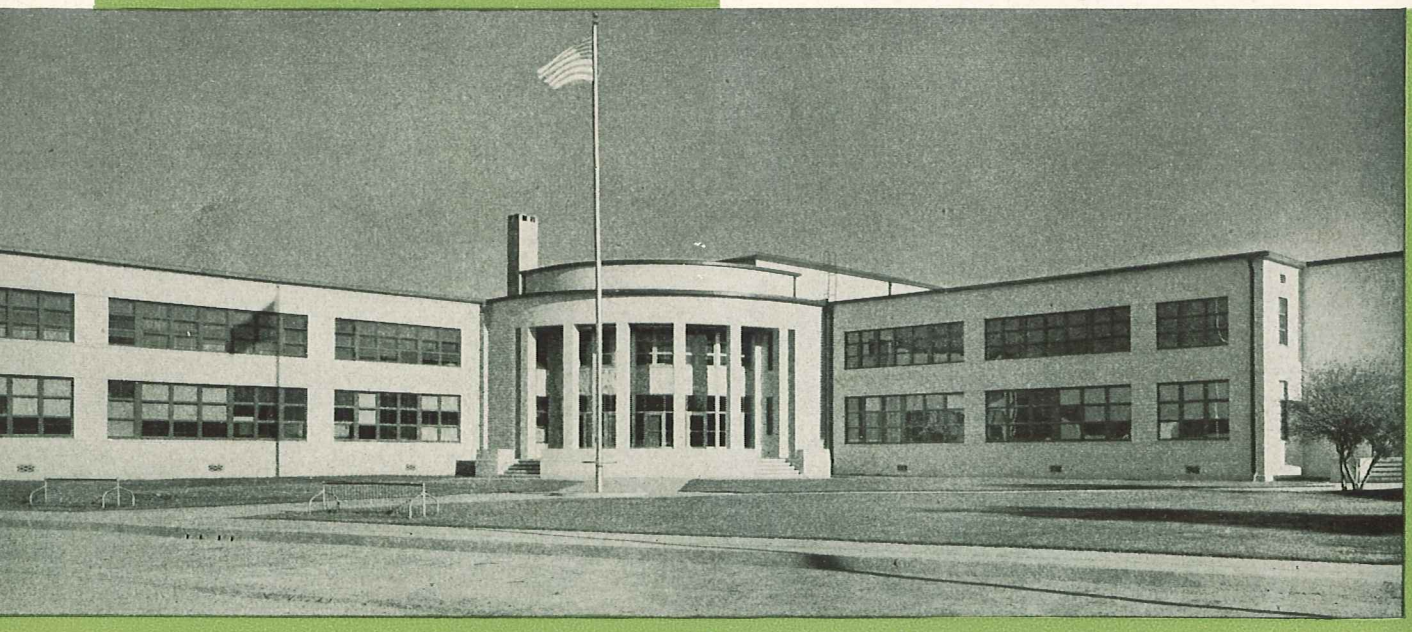
THICKNESS 3/16" and 7/32".

MAX. SIZES 3/16"-----60" x 120" and 76" x 94"
—not over 50 square foot in area
7/32"----72" x 120" and 76" x 112"
—not over 60 square foot in area

WEIGHT 3/16"--------40 oz. per square foot.
Cut sizes packed in 50 square foot boxes which weigh approximately 135 lbs. Stock sheet sizes over 10 square feet packed in 300 square foot boxes which weigh approximately 850 lbs.
7/32"--------45 oz. per square foot.
Cut sizes packed in 50 square foot boxes which weigh approximately 150 lbs. Stock sheet sizes over 10 square feet packed in 300 square foot boxes which weigh approximately 950 lbs.

SAMPLES Furnished upon request.





The strength and clarity of Pennvernon Heavy Sheet Glass recommends its use for schools.

PENNVERNON BENT • CHIPPED • GROUND SHEET GLASS

Bent Sheet Glass

Pennvernon Sheet Glass—in double strength, 3/16″ and 7/32″ thickness—can be bent at the factory in an infinite variety of cylindrical, spherical, and combination bends.

It is always necessary to supply us with a pattern or template of the curve desired, even when regular curves are ordered. Curves will be accurate for practical purposes but not microscopically accurate. See illustrations and description of regular bends, Section VI, "Work on Glass." All orders are fabricated to order, and sufficient time for manufacture and shipment must be allowed.

Chipped Sheet Glass

Chipped sheet glass is produced by coating the glass with glue and then drying it rapidly. Chipping is one of the oldest forms of glass decoration. No two chipped surfaces are identical in pattern. Very delicate, fernlike traceries and deep chipped effects are possible.

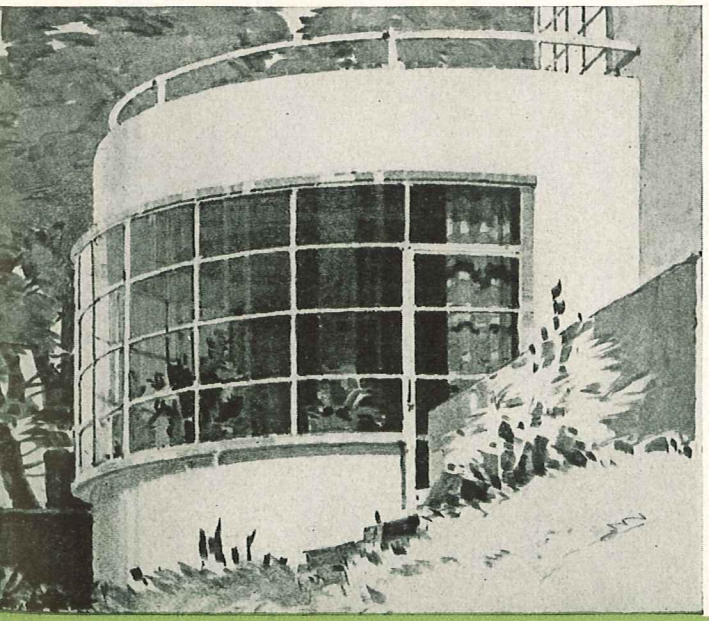
Glass chipped by the single process, i.e., one application of glue, is somewhat less dense and less capable of obscuring vision than glass receiving a double process, i.e., two applications of glue.

THICKNESS	1/8″.
MAX. SIZE	Same as double strength.
WEIGHT	Same as double strength.
SAMPLES	Furnished upon request.

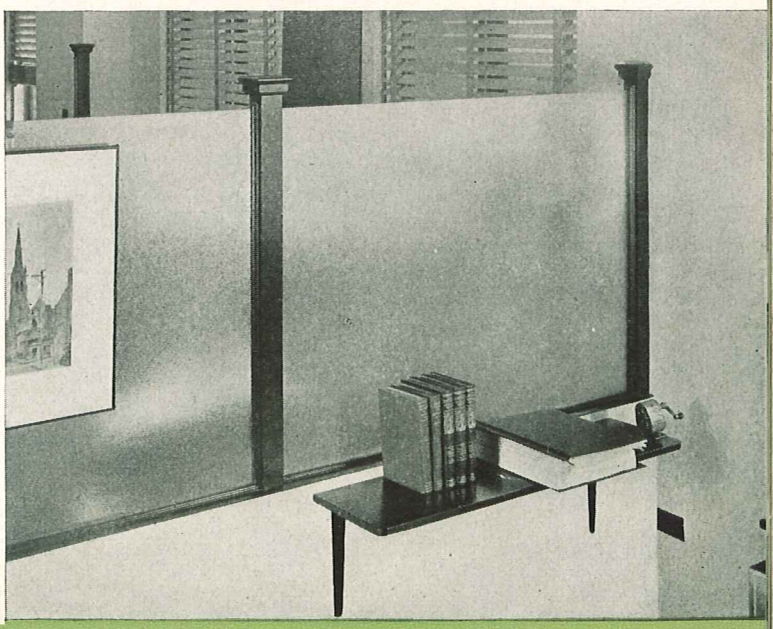
Ground Sheet Glass

Double strength (1/8″) glass can be supplied with one surface ground. This process, or surface treatment, gives the glass a frosted, or satin-like, finish. It transforms a clear glass into an obscure glass with excellent light diffusion, thus providing a high level of illumination and a light that is soft and restful. It is particularly adapted for use in drafting rooms, photograph studios, cotton classing rooms, etc., where soft, diffused light is essential.

THICKNESS	1/8″.
MAX. SIZE	Same as double strength.
SAMPLES	Furnished upon request.



Bent Pennvernon affords an unlimited range of uses of the type shown in this illustration.



Chipped sheet glass provides an attractive and dignified appearance, while obscuring vision.

CARRARA STRUCTURAL GLASS

Carrara has an enviable record of usefulness as a structural material in buildings and for its adaptability to a wide variety of uses in decoration. It is an opaque glass which successfully combines beauty, versatility, sanitation, permanence, and reasonable cost. It is mechanically ground and polished to a true, flat surface.

Carrara Glass is strong and durable, made to withstand rigorous use indoors and out. It will not absorb odors of any kind and is impervious to grease, grime, moisture, chemicals, and pencil marks. It has greater tensile strength and resistance to wear than marble.

Carrara brings to the architect and decorator soft, rich colors that are genuinely distinctive, and designed to harmonize with almost any color scheme. It retains its beauty year after year, never fading or staining.

Carrara Glass has proved of inestimable value used as work surfaces or working counters in many plants, particularly those engaged in the assembly of small parts. It has many advantages, and unlike metal or soft materials, no amount of scratching or wear affects the overall flatness. It can be supplied in eight colors, plus black and white, so that a color can be selected that gives the best color contrast with the parts to be assembled, and also the one that produces the least amount of eyestrain. The smooth, clean working surface contributes to speed and efficiency in handling parts. Carrara can be furnished in polished or suede finish to suit the customer's demands, and, where the service is severe, it also can be tempered so as to resist mechanical and temperature shocks.

RECOMMENDED USES

Store Front Facia and Bulkheads	Grave Markers
Interior Walls and Ceilings	Shelves
Toilet Room Walls and Partitions	Window Stools
Dairy Walls, Floors and Ceilings	Kitchen Splashboards
Fireplace Facing and Mantel	Table Centerpieces
Decorative Paneling	Mantel Tops
Refrigerator Linings	Modern Furniture
	Bank Desks
	Scale Tops
	Table Tops
	Counter Tops
	Shower Compartments

Look for this label as your assurance of quality.

Finishes

Standard finish—polished, brilliant, reflective plate glass finish, on top surface thicknesses up to and including ¾". Thicknesses ⅞" and 1¼" are available on special order, with surfaces polished both sides.

Honed finish—soft, non-reflective surface which is ground very smooth with the finest grades of sand and emery on top surface, up to and including ¾". Supplied on special order, ⅞" and 1¼" honed both sides.

CARRARA

The modern structural glass

Decoration

Carrara can be beautifully decorated to suit individual tastes. It can be carved or fluted. It can be sand-blasted with any design desired, bringing the pattern out either in shallow or deep relief. These designs may be further enriched with gold, silver, or colors.

Lamination

Two or more thicknesses of Carrara can be laminated by heat and pressure, assuring perfect adhesion, and slabs thus formed can be handled and installed like a slab of single thickness.

By lamination, many original effects may be obtained; such as the combination of different colors and the building up of pilasters with reveals and offsets.

Especially recommended for toilet partitions and other uses in which two polished surfaces are required.

Thickness Recommended:

Ceiling	11/32″
Wainscot, Ashlar	11/32″
Cap	7/16″
Base	7/16″
Store Front Facia	11/32″
Wainscot, Panel	7/16″
Store Front Bulkheads	7/16″
Partitions	⅞″
Door and Window Trim	⅞″
Deal Plates	⅞″
Counter Tops	1¼″
Lintel	1¼″
Stiles	1¼″
Shower Seat	1¼″

Installation

Carrara is easy to install. It is handled similarly to marble. To insure installations being made according to our standards, we maintain our own workmen.

Carrara may be installed over any hard, firm wall surface, but an allowance should be made for a space of ⅜″ behind the glass for setting.

Carrara is installed by means of a plastic cement, which bonds permanently with the glass and the wall, yet allows for setting, shrinkage, and expansion.

We provide all hardware necessary for the erection of our material, and will have the slabs drilled for any hardware or fixtures which we do not supply, such as hinges, strikes, etc., provided we are furnished their location and dimensions so that the drilling may be done in our processing shop.

COLORS AND THICKNESSES

White	11/32″, 7/16″, ¾″, ⅞″, and 1¼″
Black	¼″, 11/32″, 7/16″, ¾″, ⅞″, and 1¼″
Ivory	11/32″, 7/16″, ¾″, ⅞″, and 1¼″
Gray	11/32″, 7/16″, ¾″, ⅞″, and 1¼″
Tranquil Green	11/32″, 7/16″, ⅞″, and 1¼″
Beige	11/32″ only
Forest Green	11/32″ only
Rembrandt Blue	11/32″ only
Wine	11/32″ only
Orange	7/16″ only

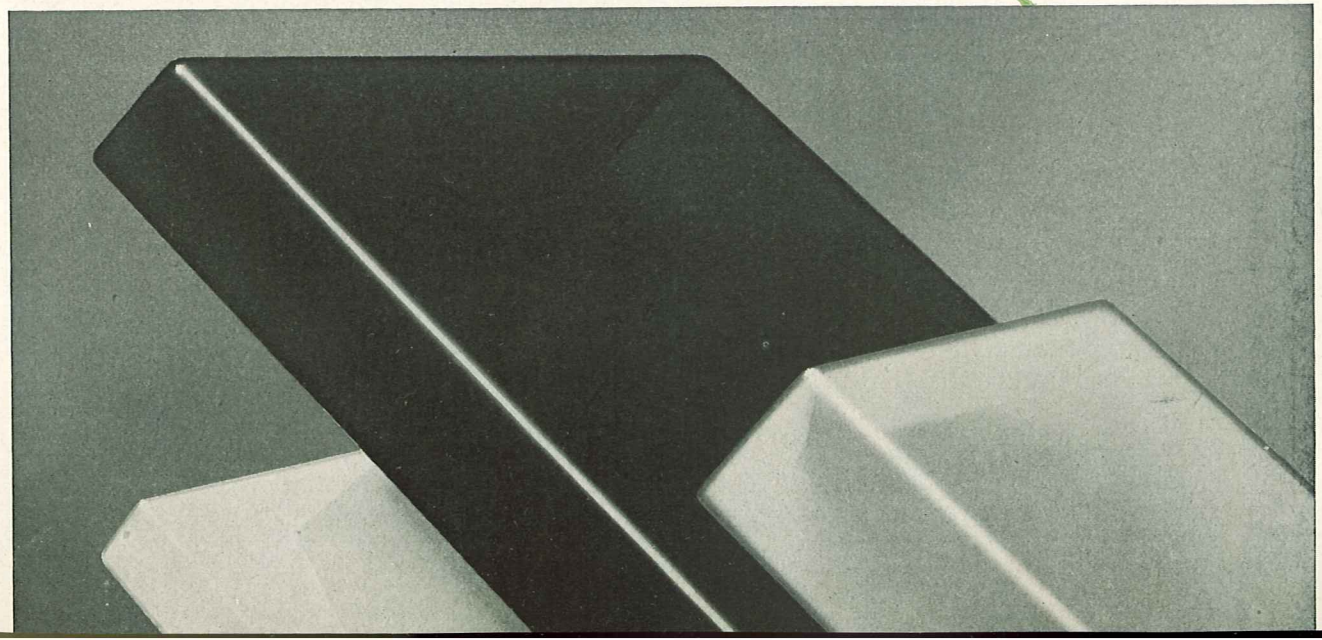
SIZES Standard Size Ashlars — 8″ x 16″, 16″ x 16″, and 16″ x 18″. Special Sizes—8″ x 8″ up to and including 24″ x 24″.

MAX. SIZE 72″ x 130″.

SHIPPING WEIGHTS
¼″—4 lbs. per square foot.
11/32″—5 lbs. per square foot.
7/16″—6½″ lbs. per square foot.
¾″—12 lbs. per square foot.
⅞″—15 lbs. per square foot.
1¼″—20 lbs. per square foot.

SAMPLES Furnished upon request.

Carrara is outstanding among structural glass products because of the perfection of its surfaces.



CARRARA STRUCTURAL GLASS FOR PUBLIC TOILETS AND WASHROOMS

Carrara is not a new product. On the contrary, it has been demonstrating in actual use its remarkable strength, beauty, and sanitation for more than thirty years.

Carrara Structural Glass resists dirt and deterioration; is unaffected by strong chemicals and oils; is impervious to pencil marks and grime. Its hard, polished surface can be kept clean by an occasional wiping with a damp cloth. It absorbs no odors. Carrara goes through the years looking as new as the day it was installed. Its colors are fast and unfading. Its finish and thicknesses are uniform.

Carrara Structural Glass is available in a pleasing pure white and a dense, permanent black; in three beautiful pastel colors, tranquil green, ivory, and gray; in warm vibrant trim colors of wine, blue, orange, and green. These colors, with their soft, rich depth of tone, are ideal for use in many attractive treatments and permit numerous color schemes and combinations.

Carrara Walls are easily cleaned and retain the perfect beauty of their original appearance permanently.

Finishes

Standard finish—polished, brilliant plate glass finish on top surface, thicknesses up to and including ¾". Thicknesses ⅞" and 1¼" supplied on special order with surfaces polished both sides.

Honed finish—soft, reflective surface, ground very smooth with finest grades of sand and emery on top surface thicknesses up to and including ¾". Supplied on special order, ⅞" and 1¼" honed both sides.

The last word in cleanliness and convenience.

CARRARA STRUCTURAL GLASS FOR KITCHENS

Kitchen walls of Carrara Structural Glass are bright and cheerful. Apply this modern glass veneer on walls and ceilings of kitchens to secure the maximum in sanitation. It will not absorb odors or grease; is impervious to chemicals and pencil marks.

Carrara walls or wainscot can transform an old kitchen into a new eye-catching thing of beauty and utility—and make the kitchen of a new home more beautiful and practical than you dreamed.

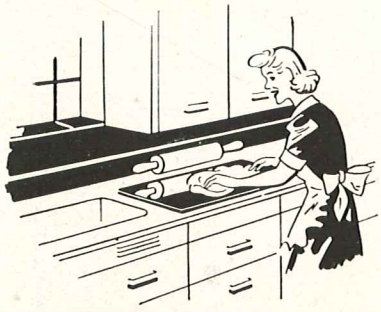
Carrara is a structural glass that is made just like fine plate glass, mechanically ground and polished to a true, flat, lustrous surface of great beauty. The sleek, reflective finish of the glass means that Carrara rooms take on greater size, spaciousness, airiness, light, and charm. There is a rich elegance about a room walled with this material that must be seen to be appreciated, an appeal to good taste and quiet beauty unmatched by any other structural material.

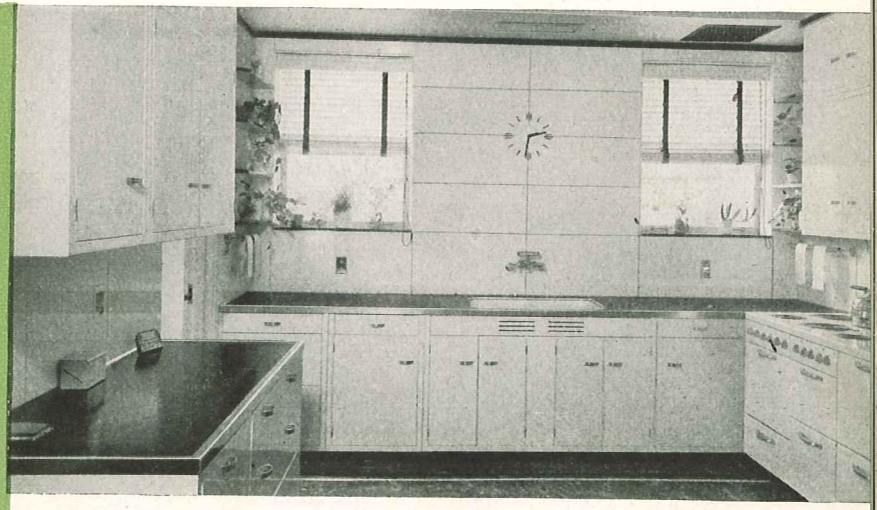
An important part of Carrara's charm is in its colors —soft, mellow colors which singly, or in striking combination, create rooms that arouse the enthusiastic praise of everyone who sees them. There are eight colors available, plus black and white, enough to give you a wide choice of color schemes and tone harmonies. These eight colors are: tranquil green, gray, ivory, beige, forest green, Rembrandt blue, orange, and wine.

RECOMMENDED USES

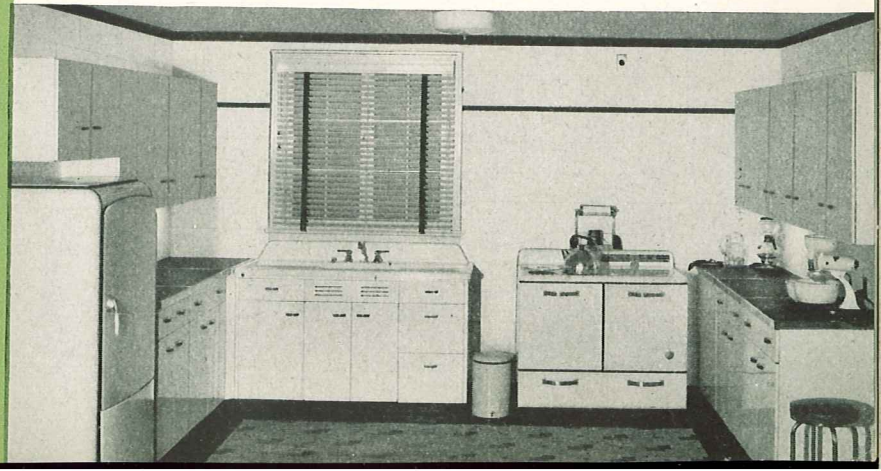
Walls and Ceilings
Window Sills
Refrigerator Linings
Door and Window Facing
Shelves
Semi-partition Covers
Splashboards
Drainboards
Table Tops

Kitchens with Carrara walls always stay new looking, never stain or discolor, are easily cleaned.





Carrara walls or wainscots transform an old kitchen into the last word in modern smartness.



CARRARA STRUCTURAL GLASS FOR BATHROOMS

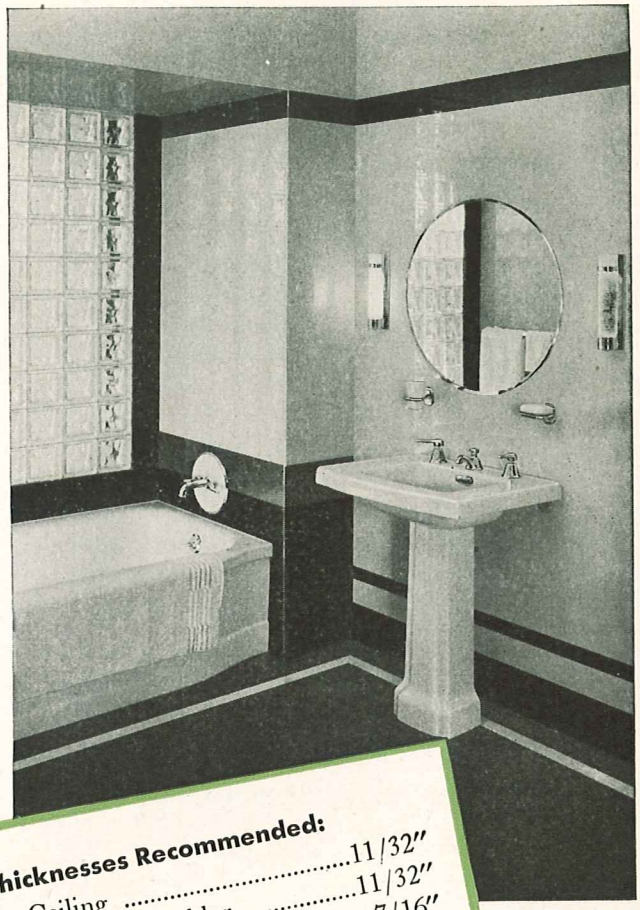
Carrara Structural Glass has been widely used for generations as a veneer on walls, ceilings, and wainscoting. The unique beauty of Carrara Glass walls, ceilings, and wainscoting is equaled by their practical utility. A Carrara wall will never craze, check, or stain. Its color will never fade. Its bright, smooth finish lasts year after year. It is not affected in any way by those usual enemies of bathrooms—moisture, chemicals, grease, and grime; and as for cleaning, a Carrara wall is the housekeeper's dream. Just wipe it down occasionally with a damp cloth.

Carrara Glass on interiors is attached against plaster and other dry and permanently secure wall surfaces with a mastic cement made for interior use. It is set with 1/64″ joints which are pointed with joint cement, except in showers or bathtub recesses where the joints are solidly abutted with joint cement.

Competent supervision and skilled workmen in our employ insure installations of very highest quality.

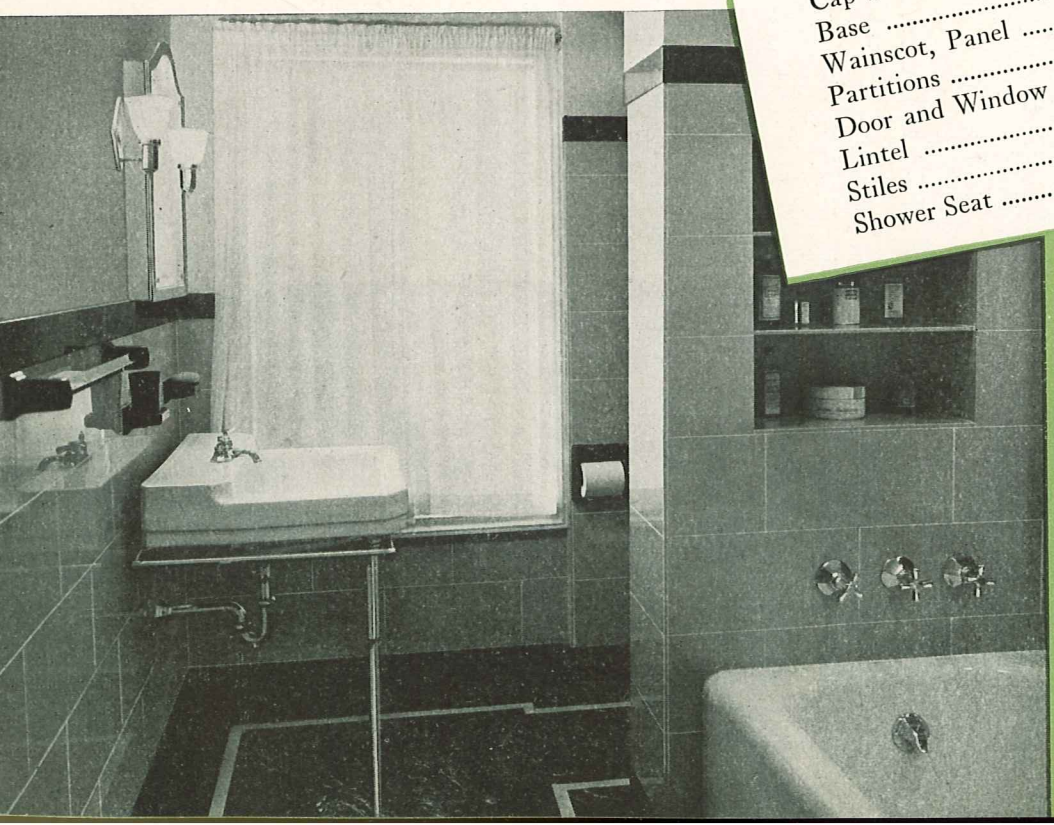
Carrara Structural Glass is available in eight colors, plus black and white, which insures pleasing color combinations that will harmonize with any decorative scheme.

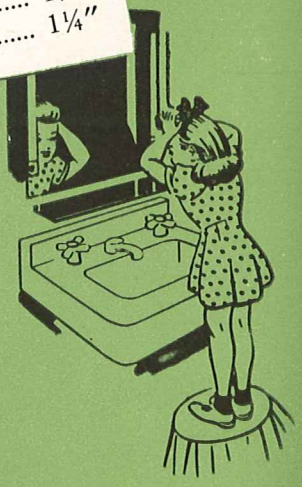
Because it is all glass, Carrara's rich colors are permanent. They are inherent in the glass itself and thus can never fade or wear off.



Thicknesses Recommended:

Ceiling	11/32″
Wainscot, Ashlar	11/32″
Cap	7/16″
Base	7/16″
Wainscot, Panel	7/16″
Partitions	⅞″
Door and Window Trim	⅞″
Lintel	1¼″
Stiles	1¼″
Shower Seat	1¼″





The richness and the beauty of Carrara for bathroom walls and wainscots is unequaled.

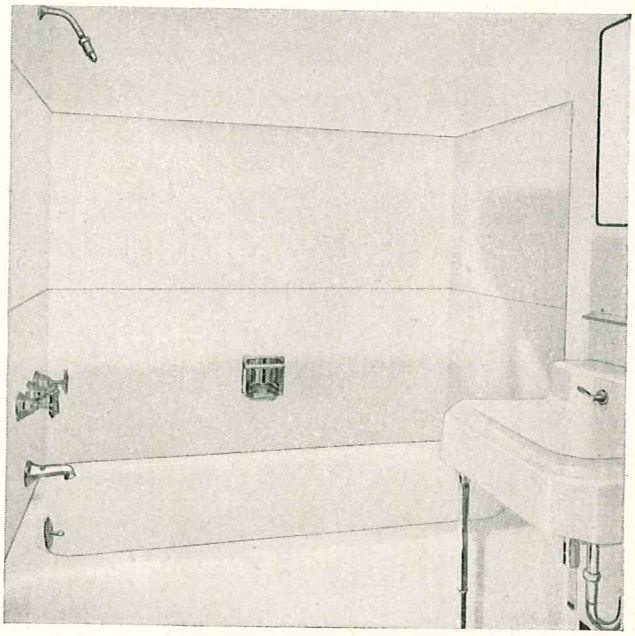
READY-BUILT CARRARA GLASS PANELS

for new construction only

Carrara Glass is available in ready-built panels completely prefabricated at the factory and mounted on plasterboard, ready for easy, low-cost installation for bathtubs, wainscots, and tub recesses. (See illustrations showing installation.)

These panels are mounted on plasterboard which extends beyond the edge of the Carrara Glass, providing a flange around the glass panel which is fastened directly to the studding, thus anchoring the panel in place. Necessary holes through the Carrara for plumbing, pipes, soap dishes, etc., are drilled at the factory exactly as needed.

The saving in labor, time, and construction effected by this new method of handling Carrara substantially reduces the cost of Carrara for wainscots and tub recesses.



QUICK FACTS

Size of Ready-Built Panels: Bathtub panels up to 48 inches above the top of the tub. Where there is a shower, a Ready-Built Carrara wainscot 48 inches high is recommended. This 48-inch wainscot will have one horizontal joint. Where there is no shower, a 24-inch panel above the tub is adequate. Stove backing panels are 44 by 28 inches.

• • •

Pattern: Upon receiving from the contractor information as to size and make of bathtub, with fixtures required, Pittsburgh Plate Glass Company supplies him with a pattern showing where fixtures should be placed.

• • •

Package: Package includes clips, mastic, chromium soap dish. Ready-Built Carrara panels, with proper holes drilled and ready to install.

• • •

Colors of Carrara available: Ready-Built Carrara panels come in black, white, ivory, tranquil green, beige, gray, forest green, and Rembrandt blue Carrara. A color to blend with almost any color scheme.

• • •

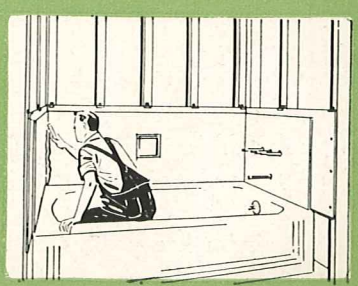
Finish: The face of the Carrara finishes flush with the plaster surface of the wall.

4 STEPS OF INSTALLATION

1. Level up tub, place mastic around rim to waterproof and butter studs with mastic before setting glass.

2. Set plate at back of tub first. Nail through plasterboard flanges and use special clips supplied.

3. In applying end panels permit plasterboard to jut beyond tub to next stud. With 48" high wainscot use same sequence for second course.



4. Clean glass and fill joints with pointing compound supplied. This assures thorough waterproofing.

GLASS TANKS

for hot acids, electroplating, dyes, foods, and other "hard to handle" solutions.

Pittsburgh Glass Tanks are tanks manufactured from heavy plates of specially heat-treated glass. They are the type of tank for which industry has long been waiting, since glass is a material having the highest type of resistance to chemicals.

Heretofore, glass was considered too fragile for this purpose, but with the advent of Herculite Tempered Glass, this difficulty has been overcome so that the reverse is true, and glass tanks now can resist the demands made on them by heavy industry.

Pittsburgh Tanks are made in two general types: the first, an all-glass or transparent type, made in moderate sizes; second, metal or wood shells, lined with glass, made in somewhat larger sizes, both types being manufactured complete in our factory and shipped, ready to put into service.

The tempering treatment of glass which has made the tank development possible merits some special description. This is a unique heat-treating process that can be applied to any Pittsburgh Glass, either transparent or opaque. It makes the glass approximately four times as strong as regular glass of the same thickness, and permits it to withstand instantaneous temperature shock of approximately 400 degrees F., and continuous working temperatures from 500 to 600 degrees F.

Solutions Handled

Pittsburgh Glass Tanks are ideal for most solutions, not only because they handle many that are difficult or impossible in other types of tanks, but also because with less corrosive solutions, they give longer satisfactory life.

A special section of the Pittsburgh Research Laboratory is devoted to the testing of solutions and unusual working conditions and is prepared to make recommendations in connection with any unusual problems.

The following are a few of the solutions that are now being handled by Pittsburgh Glass Tanks:

Mineral Acids—Sulphuric acid concentration (66° Baume), Hydrochloric acid concentration (22° Baume), Nitric acid concentration (42° Baume), Aqua Regia (1 vol. HNO_3 3 vol. HCl), Chromic acid (up to saturation), Acid Chromates.

Organic Acids—Acetic acid (up to concentrated), Lactic acid (up to 50%), Oleic acid, Tartaric acid.

Acid Pickling—Sulphuric acid at 50% concentration and 220°F., Hydrochloric acid 22° Be. at 220°F., Nitric acid conc. 42° Be. 120°F., Nitric acid (14%) plus 8% Sod. Dichromate 100°F., Sulphuric acid (10%) plus 8% Sod. Dichromate 120°F.

Acid plating solutions containing up to 20% Sulphuric acid or Hydrochloric acid at temperatures up to 200°F.

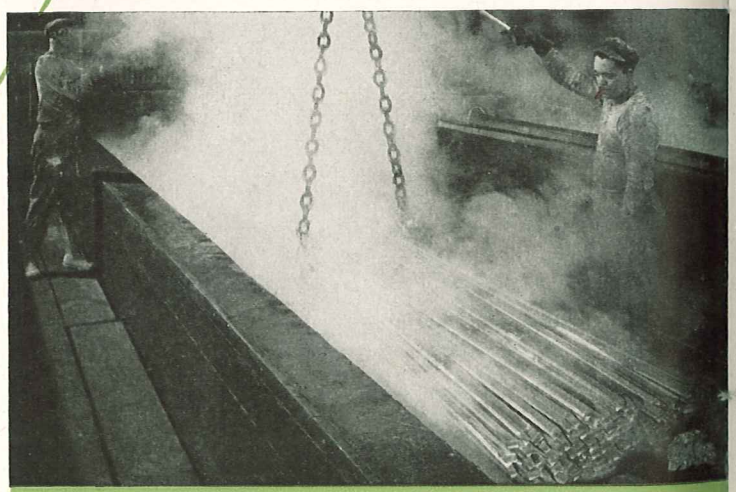
Chrome plating solution at 120°F.

Alkaline plating solutions for copper—gold—silver—tin—zinc.

Alkaline bench storage at room temperature.

Sodium hypochlorite 16%; Calcium hypochlorite 5%.

Glass tanks are not suitable for any solutions containing Hydrofluoric acid or those involving heavy concentrations of caustic, particularly when operated at high temperatures, since both will attack glass rapidly.



28′ glass-lined tank handling 15% sulphuric acid at 185°F. for pickling steel bars.

Transparent Glass Tanks

The Pittsburgh Transparent Glass Tank offers unique advantages in many applications, because of its transparency. This type of tank is also capable of meeting unusually rigorous conditions and handling more corrosive solutions than the lined tank: for example, hot chromic acid and hot nitric acid. This is due to the kind of joint possible with this type of tank.

Pittsburgh Transparent Tanks are constructed of

Herculite Plate Glass throughout, varying from ⅝″ to 1¼″ thick depending on size and service conditions.

The bottom has an inner or secondary lining of Herculite white Carrara.

Fastenings are of non-corrosive metal, such as Monel Metal or stainless steel and the former is usually supplied unless otherwise specified.

Side walls are grooved to take gaskets which are of impregnated glass cloth. Impregnating material will vary with solution to be used in tank.

Tanks of this type should have an outer covering of wood or metal in those cases where they contain valuable solutions or where they contain materials that are dangerous to personnel if released suddenly by accidental breakage of tank.

Glass-Lined Steel Tanks

The Pittsburgh Glass-lined Tank is usually supplied in a steel shell, although for certain special applications it may be furnished in wood.

This tank is of very rugged construction. The shell is formed from ¼″ steel plate, continuously welded at all joints with a 3″ x 3″ angle, welded around top edge to act as stiffener and base for coping. Where the size of tank is such that added stiffness is required, an additional 3″ x 3″ angle is welded around tank, slightly below mid-section.

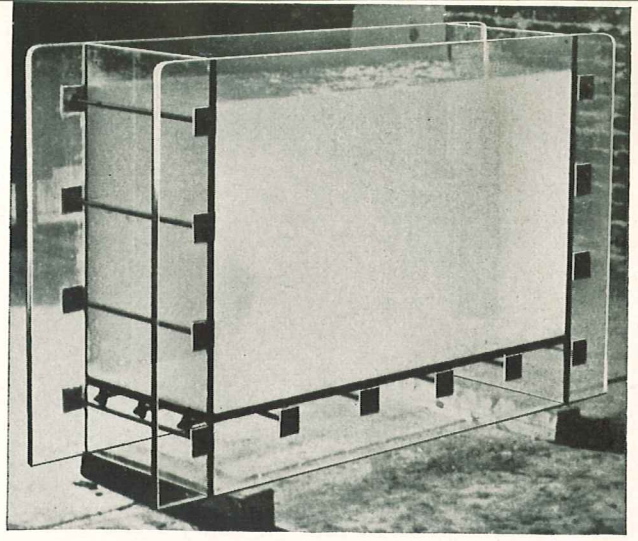
The standard tank has a lining of ½″ Herculite Plate Glass, held away from the outer shell by special spacers. These spacers are also designed to put compression on the joints that contain glass cloth gaskets.

The space between the glass and outer shell contains a continuous acid resistant membrane applied by a process developed by our laboratory.

This type of tank is regularly supplied with a replaceable wood coping but can be furnished of glass at some additional cost, for those jobs where the top edge is not subjected to a great deal of mechanical abuse.

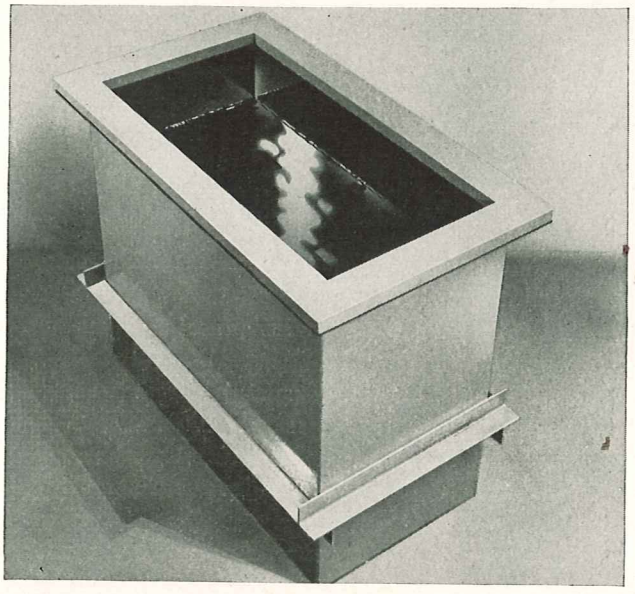
The exterior of tank and coping receive two coats of acidproof enamel before leaving factory.

Due to the fact that the black membrane shows through the glass lining, the interior of the tank has the appearance of black enamel.



Sizes

While tanks are not ordinarily carried in stock, certain parts are standard and shipment will be expedited if they are ordered in sizes where all dimensions are in multiples of 6″. Maximum size (inside), length 8′, width 5′10″, depth 5′.



For certain applications, Herculite white or colored Carrara can be furnished.

Available Sizes

While tanks are not ordinarily carried in stock, certain parts are standard and shipment will be expedited if they are ordered in sizes where all dimensions are in multiples of 6″. Tanks of this type can be furnished only in those sizes up to and including a maximum length not exceeding 12′.

In connection with inquiries concerning Pittsburgh Glass Tanks, the following information should be supplied so that the laboratory can furnish you with correct data and also to insure the fact that the tanks furnished are of the best design to meet the special working conditions.

Solutions—This should include principal substances, impurities, composition, concentration, pH, etc.

Temperature—This should include maximum and minimum temperature at which the tank will be called on to operate and if the temperature follows a fixed cycle, the time should be given.

Size—This should be given in inside dimensions, also outside dimensions if tank must fit into a definite space, or if for storage purposes only, this may be given only in capacity, such as gallons.

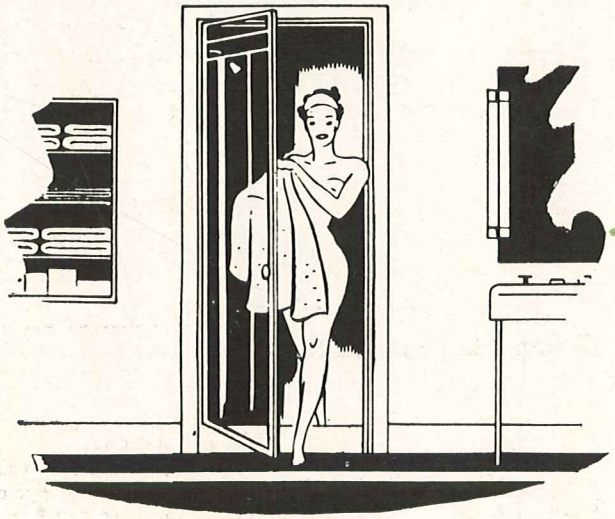
Operating conditions—This should include the physical conditions under which the tank is operating, weight and kind of load being immersed in the tank, location, weight and size of anode or cathode bars, type of crane or handling facilities that affect the operation of the tank, etc.

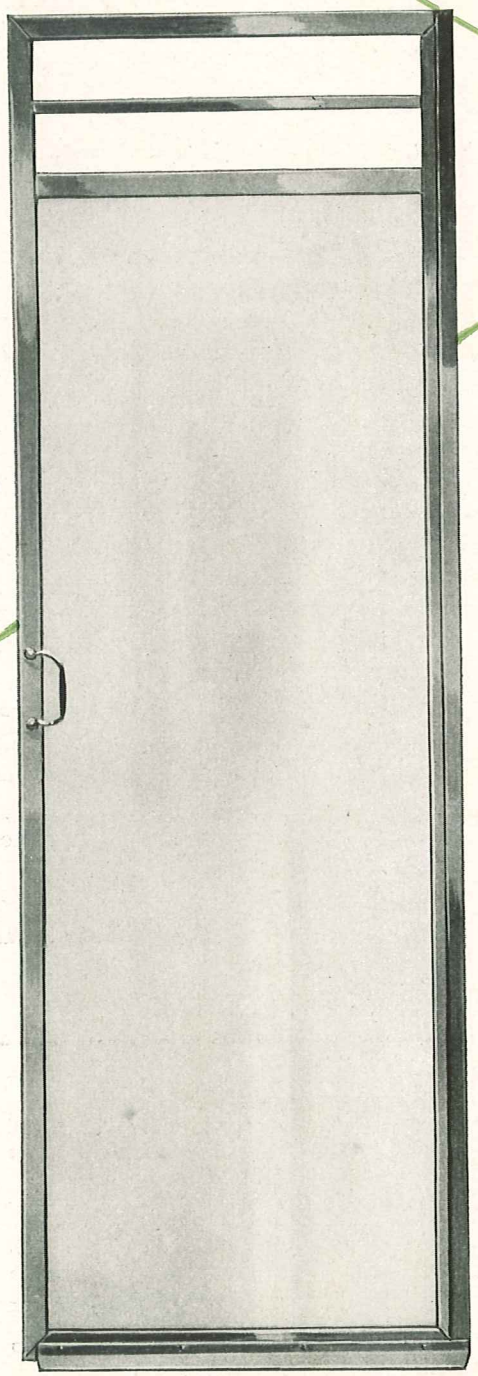
Fittings—This should include the number and size of outlets or drains and preferred material, as well as their location and complete information concerning covers, fume hoods and mounting for equipment.

GLASS SHOWER DOORS

Especially created for shower bath compartments for modest homes and apartments, these shower doors combine luxury, utility, and attractive appearance.

In the construction of these doors, the door frame, jambs, drip gutter, horizontal bar grille, and miscellaneous parts are all fabricated of extruded aluminum finished in "Alumilite." Each door is completely assembled with ¼" polished plate glass (alternate, 3/16" window glass or 7/32" obscure glass) set in an extruded rubber channel and is delivered complete with necessary installation screws, toggles, or lead shields. When ordering, specify the type of glass wanted and whether door is to be hinged on right or left side.





Shower Door A

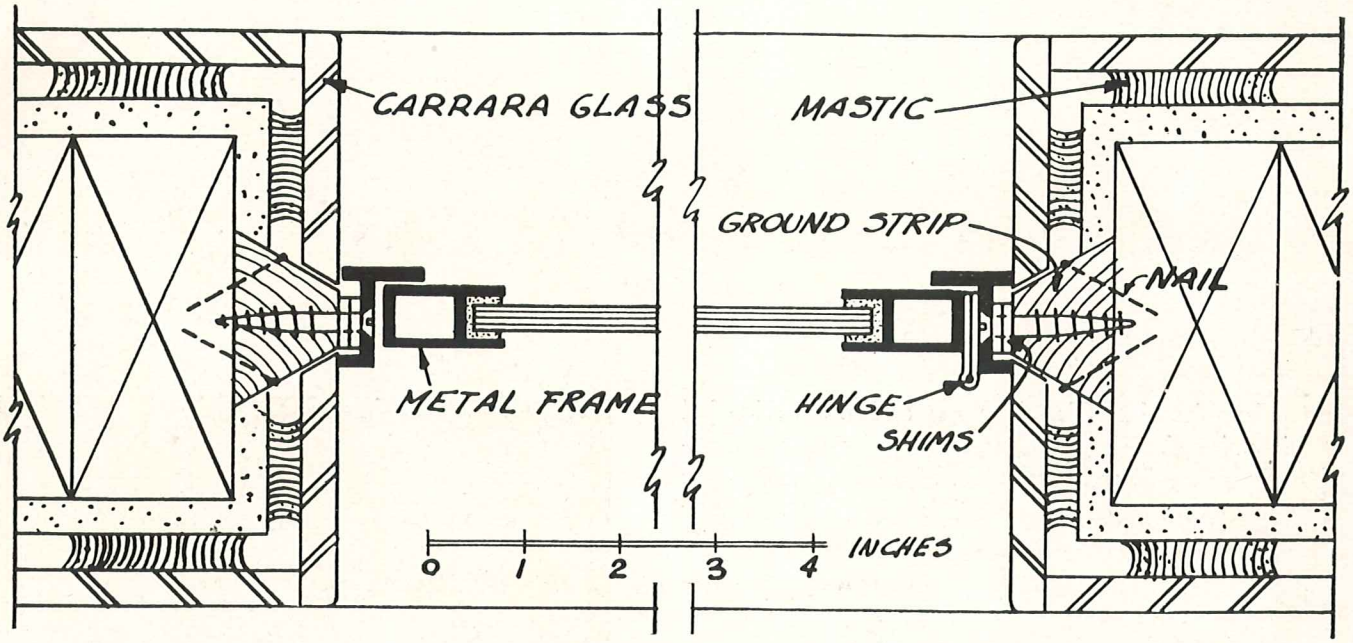
24" x 72" door for installation on jambs of Carrara Glass Ashlars or other materials in accordance with sketch A on page 37.

Shower Door B

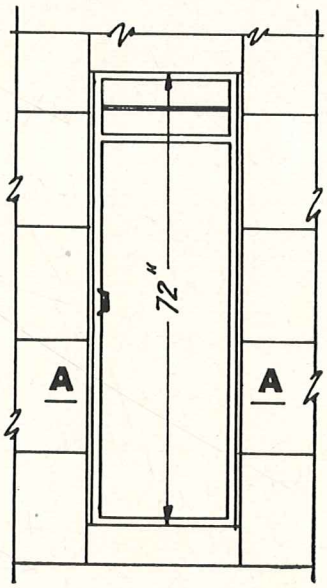
24" x 72" door for installation on stiles of ⅞" or 1¼" Carrara or other materials with aluminum channels 1½" deep for installation in accordance with sketch B on page 37.

Weight

(crated) approximately 85 pounds.

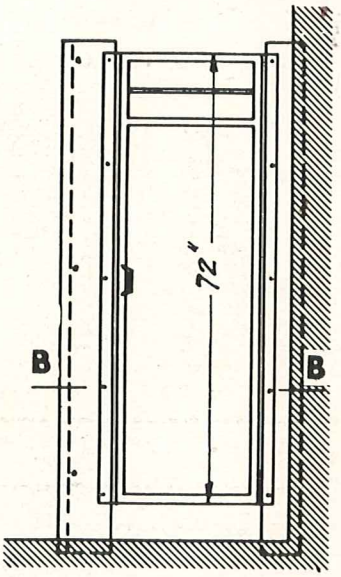


SECTION A-A



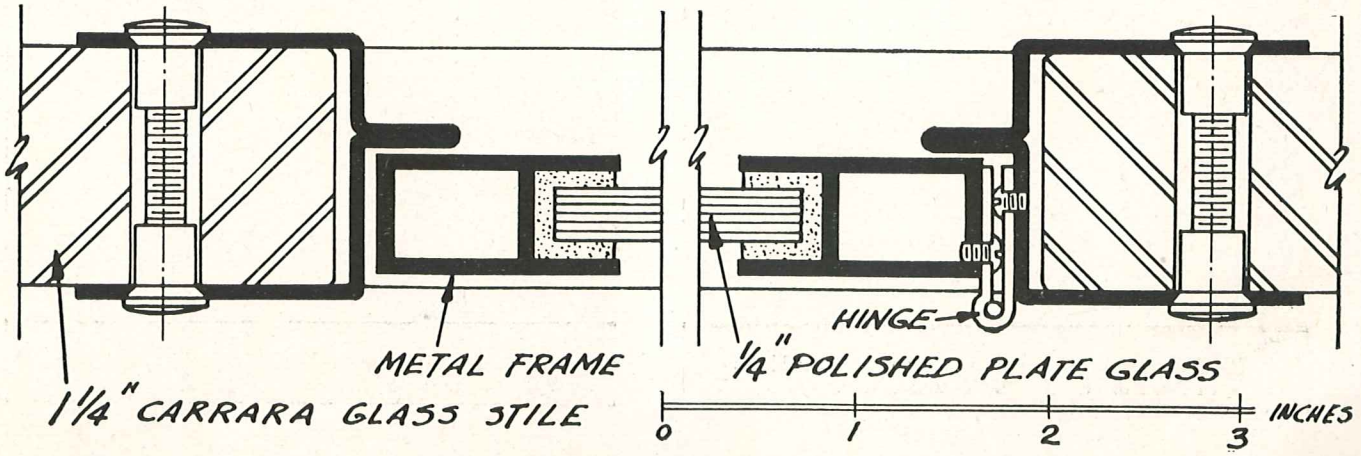
ELEVATION OF SHOWER STALLS
Carrara Glass Ashlars (or other material)

CONSTRUCTION DETAILS



ELEVATION OF SHOWER STALLS
Carrara Glass Stiles (or other material)

SECTION B-B



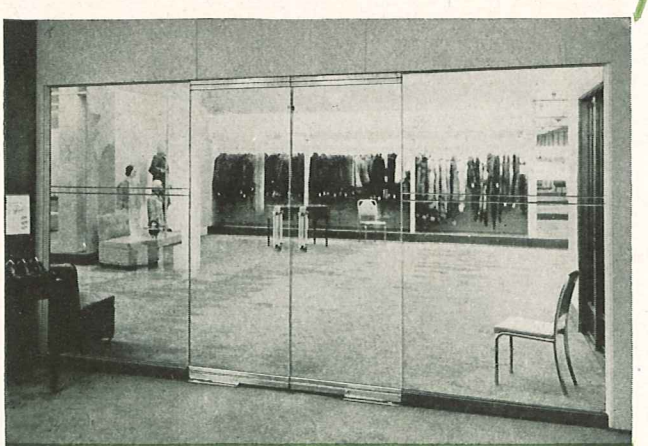
HERCULITE PLATE GLASS DOORS AND PANELS

Herculite Plate Glass Doors and Panels provide full view of the interior and thus are ideal for modern decorative and utilitarian purposes. These doors and panels are transparent, free from distracting cross sash or frames. They provide highly desirable light-transmission and dress up any interior . . . give it freshness, originality and charm. Herculite Plate Glass Doors and Panels are now in use in practically every kind of building for both exterior and interior installations, and they have proved that they are most practical as well as attractive. They have an almost limitless range of design and use.

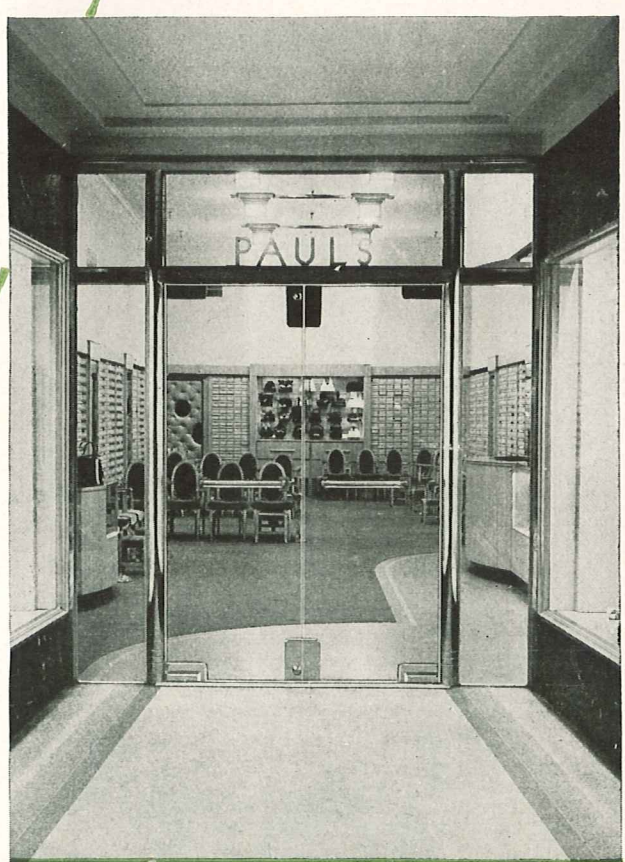
Look for the Herculite Label.

SIZES Herculite Plate Glass Doors and Panels are made in ¾" thickness, tempered plate glass only, and the standard thickness tolerances of plus nothing, minus 3/64" will apply. Furnished in any width up to 48" and any height up to 108" exact finished sizes with dimensional tolerances of plus nothing, minus 3/32" of the actual overall dimensions of the doors or panels specified.

WEIGHT **(uncrated)** 10 pounds per square foot.



Maximum light transmission into the entrance and halls is a feature of Herculite Doors and Panels.



Herculite Doors provide clear vision, utility, and smart appearance.

Fittings

The bronze fittings with which Herculite Plate Glass Doors and Panels are equipped are cast on the tempered glass at the factory and cannot be changed or altered on the job without possible damage to the glass. Herculite Plate Glass Doors and Panels cannot be drilled, cut, or otherwise altered after leaving the factory.

All metal fittings are solid bronze. They will be furnished as specified in the following standard finishes:

polished bronze	polished chrome plating
brushed bronze	brushed chrome plating

All fittings are secured by molten metal application and high heat. Such temperatures would destroy the finish of alumilited aluminum, therefore alumilited aluminum fittings cannot be furnished. Brushed chrome finish closely matches alumilited aluminum in appearance.

The line of white metal used to cast fittings to glass is visible between the glass and the fittings and appears as a white metal trim line on bronze fittings but is not objectionable, and it is necessary that it be accepted.

It is generally understood that bronze will tarnish regardless of protectives used. In many cases the rich darkened color of weathered bronze is preferred to the color of new material. However, if it is desired to maintain the original finish, it can be restored by scrubbing brushed bronze with a scrub brush, pumice and water; and polished bronze by using a good metal polish and a soft cloth. An application of floor or car wax is then recommended. The wax tends to delay tarnishing, but it is not a permanent protection. The process may be repeated as often as desirable.

The beauty of Herculite Plate Glass Doors and Panels is in the fact that they are completely glass, with a minimum of metal parts.

Custom Fittings

Custom fittings, furnished by others, subject to our approval, will be applied without extra charge. The dimensions and strength of members designed to hold the glass must be at least equal to the dimensions and strength of our standard metal fittings. The space between the inner surface of the custom fittings and the glass surface must be 1/16″ at all points. Molten metal application is used in applying fittings to the glass, and all custom fittings furnished by others must satisfactorily withstand the 1000°F. spot flame test. We assume no responsibility for damage to custom fittings, furnished by others, in transit or in application. Custom fittings made of alumilited aluminum will not be accepted.

Builders' Hardware

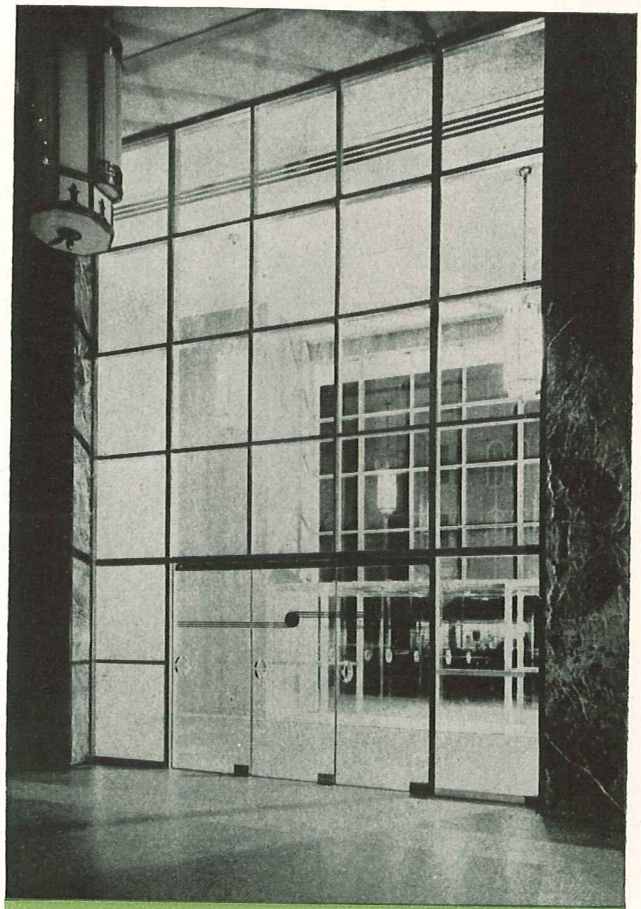
Several manufacturers of builders' hardware have designed and are manufacturing approved items which are particularly advantageous in installing Herculite Doors. A list of such approved hardware will be supplied upon request.

Pivot Hinges

The standard bronze fittings which are applied on Herculite Doors at the factory are designed to receive any typical pivot made for heavy doors. All fittings provide for 2⅝″ pivot distance from the hinge side of the door and should always be set at this distance. The fittings, however, allow for reasonable adjustment of pivot center (up to 1⅛″). All top fittings are supplied with a half-inch "oilite" bearing to receive a half-inch pivot pin. When 11/16″ pivot pin is to be used, the "oilite" bearing should be removed and the remaining 11/16″ hole in the bearing block will accept an 11/16″ pivot pin. The block is made of bearing bronze.

Door Holders

Concealed door holders can be used only with S-04 continuous fittings on Doors N, P, R, and T. Where door holders are contemplated, we must be furnished templates of the notches required in the S-04 fittings.



Transparent Herculite Doors add to the appearance of this bank interior.

Such templates are furnished by the door-holder manufacturers and must be sent to the factory along with orders for doors, in order to avoid delay in delivery. Exposed door holders are not recommended.

Push and Pull Bars

To direct traffic to the proper opening side of the door and guard against possible injury, the push and pull bars should be either half-horizontal or vertical. Horizontal bars should extend from the opening side to about the center of the door. Vertical bars on the swing side of the door are preferable. Only approved push and pull bars should be used. Several manufacturers have designed and are manufacturing approved items which are particularly advantageous in the installation of Herculite Plate Glass Doors. It is necessary that we have full information regarding the type of push and pull bars selected so that proper holes may be drilled through the glass at the factory, to hold them in place. The location of these holes must be clearly established before the doors can be manufactured.

Frames and Jambs

Metal frames, fabricated of aluminum, bronze, or stainless steel, are preferable. Where a wood frame is desired, the best installation results if the head jamb is made of metal or if a steel plate is added to the wooden head.

A free-standing Herculite Door without separation between the door and the adjacent Herculite Panels. The clarity of vision afforded by this treatment is well illustrated by the view obtained through the display windows, the door, and the side panels. Victor Gruenbaum, associate designer. Morris Ketchum, Jr., architect.

Surface Decoration

Inexpensive and attractive design effects may easily be obtained by application of paint or metal leaf (either gold or silver) by local sign painters or decorators. Decorative treatments applied in this manner are preferable and offer maximum flexibility as they may be removed, changed, or renewed as desired.

Sandblast design may also be applied on the glass at the factory before the Herculite operation. Blast designs, once applied, cannot be removed or altered. The maximum total depth of sandblasting treatment cannot exceed 1/32″. Doors or panels sandblasted one side only may be somewhat more bowed than a clear Herculite door or panel not so treated.

Holes

Minimum hole size is ⅞″ in diameter. The minimum allowable distance between the closest edge of the hole and the edge of the glass door or panel is 3″. The minimum allowable distance between the closest edge of the hole and the tip of any glass corner is 4½″. The tolerance in dimensions between holes or in location of the holes is 3/32″, and allowance for this tolerance should be provided in establishing the location for push and pull bars.

Notches

Finger pulls or other types of notches cannot be furnished in Herculite Plate Glass Doors and Panels. At no point can the overall thickness of the glass be reduced more than 1/32″.

Tong Marks

Due to the method of manufacture, tong marks will occur on one edge of the door or panel approximately 4″ apart. Exact alignment of tong marks in adjacent doors, or to maintain exact uniform spacing, is not guaranteed.

Flatness

In the process of manufacture, there is a slight deviation from the degree of flatness obtained in non-tempered glass, particularly along the edges and at the tong marks. However, this deviation from flatness is not objectionable and cannot be avoided.

Strength

Herculite Plate Glass is four to five times stronger than ordinary plate glass of the same thickness. Three-quarter inch Herculite will withstand a one-half pound steel ball dropped from a height of 36 feet, as contrasted to breakage of an ordinary ¾″ plate glass from the impact of a one-half pound steel ball dropped from a height of only 3 feet.

Fracture

The special tempering treatment given Herculite Plate Glass Doors and Panels produces its great strength but also prevents any cutting or other fabrication work after it has been tempered. Cutting the surface or chipping the edges may cause the glass to disintegrate into relatively small particles. Care should be exercised to avoid striking the exposed edges or puncturing the surface with a pointed object. When breakage occurs, we will accept the return of the bronze fittings (in good condition), and they will be used on the replacement door or panel, and proper allowance will be made for the value of the fittings thus re-used.

Clearance

The established clearance at top and sides of doors should be ⅛″ at each edge. This clearance is fixed for the hinge side and because of size tolerance may reach 7/32″ on the opposite edge in the case of a single door, and in the case of pairs of doors, clearance of ⅛″ shall be allowed between abutting glass edges; but due to tolerances, this may be as great as 5/16″. In batteries of doors, where the free edge of one door meets the hinge edge of the adjacent door, the allowed ⅛″ clearance may be as much as 7/32″. The specified clearance at the bottom of the door may be as much as ¼″, but should never be less than ⅛″. Standard practice is to allow 3/16″ clearance at the bottom of the door.

Fire Retardment

Herculite Plate Glass Doors and Panels withstand temperature differentials up to 450°F. but are not considered as a fire retardant inasmuch as they have not been approved as fire doors in Underwriters' Laboratory Code. Herculite Plate Glass Doors and Panels may be used in all openings where ordinary plate glass is approved.

Insurance

A definite schedule of Herculite Doors and Panels insurance rates may be arranged with various insurance agencies. They carry Class C at local zone rates.

Burglar Protection

Herculite Plate Glass Doors and Panels in entrances offer much more protection against burglary than typical entrance doors which usually contain other plate glass. Overhead members to operate burglar alarms may be installed through the use of the S-04-T fitting, or S-07 bolt fitting as contact point. If the tape method of protection is contemplated, a very small segment of tape need be used (subject to Underwriters' Laboratory approval).

Automatic Electric Operation

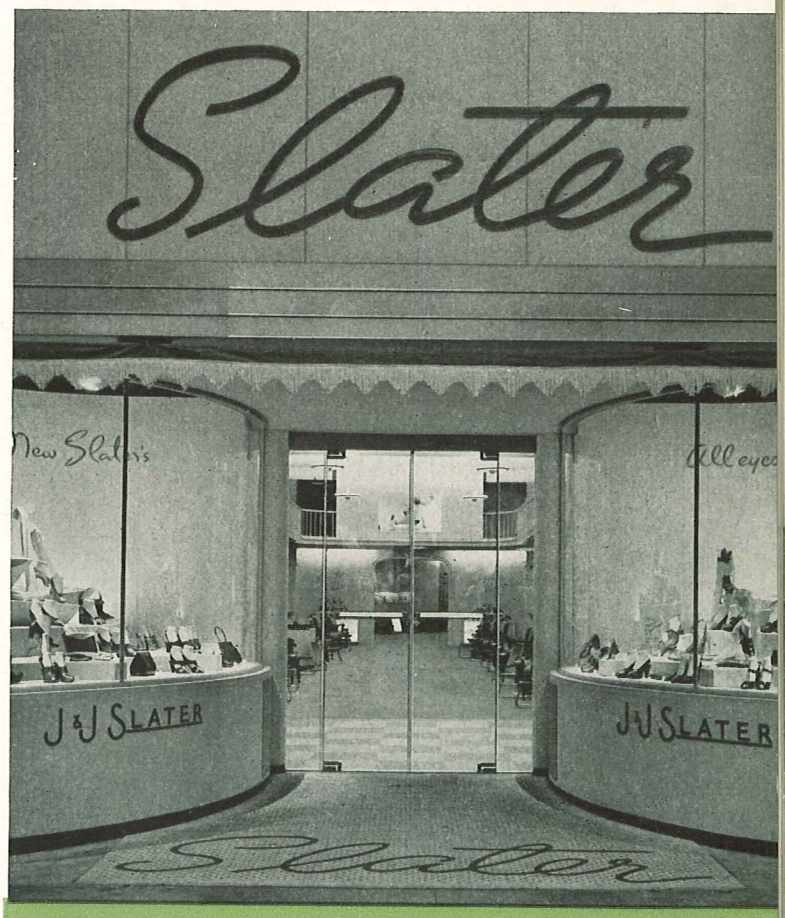
Herculite Plate Glass Doors are ideal for operation by the use of the photoelectric control. The "Magic Door" operator is furnished by the Stanley Works, New Britain, Connecticut. The "Phantom Doorman" operator is furnished by the Yale & Towne Manufacturing Company, Stanford, Connecticut. We will render every assistance in providing the manufacturer of photoelectric control systems the necessary data for the securement of the proper equipment for the automatic electric operation of Herculite Doors.

Delivery

Our normal shipping schedule is three weeks after receipt of the order. Unusual details which cause special fabrication require additional time. If custom fittings, furnished by others, are desired, the shipping schedule will be three weeks after the fittings have been received and approved. Each order must provide complete information for the guidance of our manufacturing department in production.

Installation

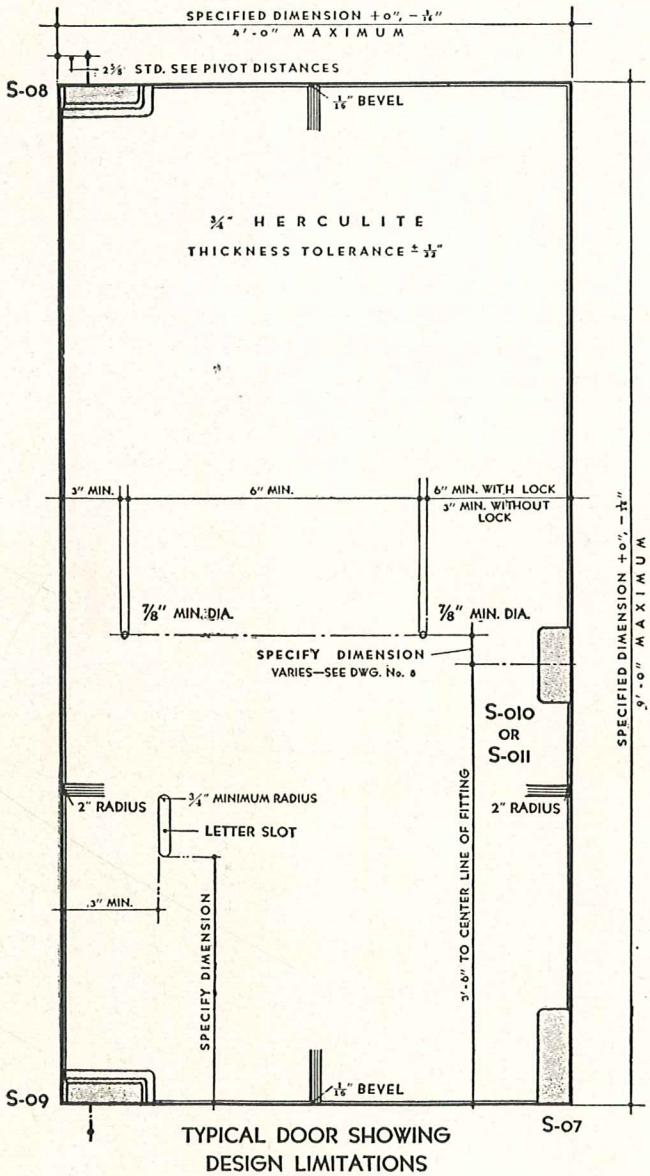
All Herculite Plate Glass Doors are furnished complete, equipped with standard cast bronze fittings of the finish specified by the purchaser and are designed to receive standard pivot hinges and other builders' hardware. Installation procedure is identical to that applying to any pivot door by ornamental iron construction contractor or other competent installer.



These Herculite Doors abut against Herculite Glass Side Panels, and it is to be noted that the thrust of the doors is taken by a beam spanning the opening.

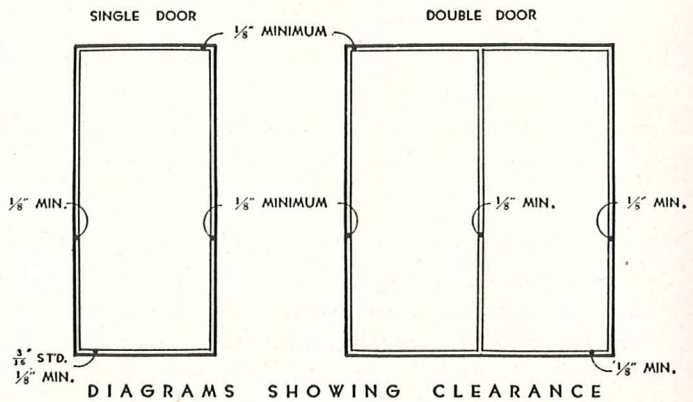
HERCULITE DOORS

design limitations and fitting assemblies

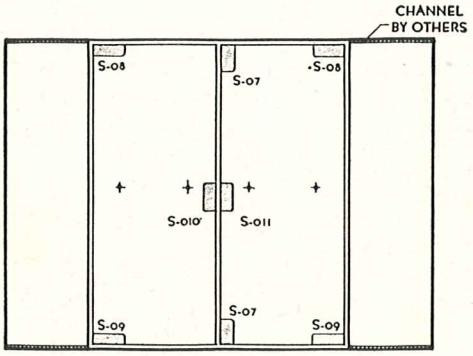


TYPICAL DOOR SHOWING
DESIGN LIMITATIONS

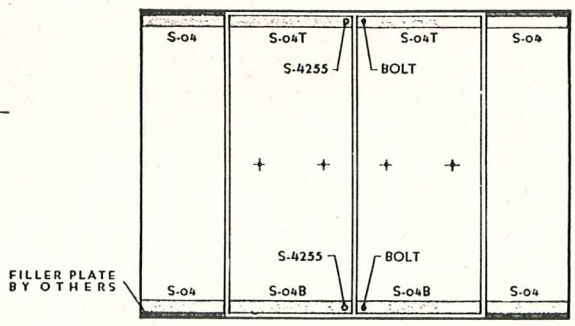
DETAIL DRAWINGS of all metal fittings may be obtained on request.



DIAGRAMS SHOWING CLEARANCE
REQUIREMENTS FOR HERCULITE DOORS



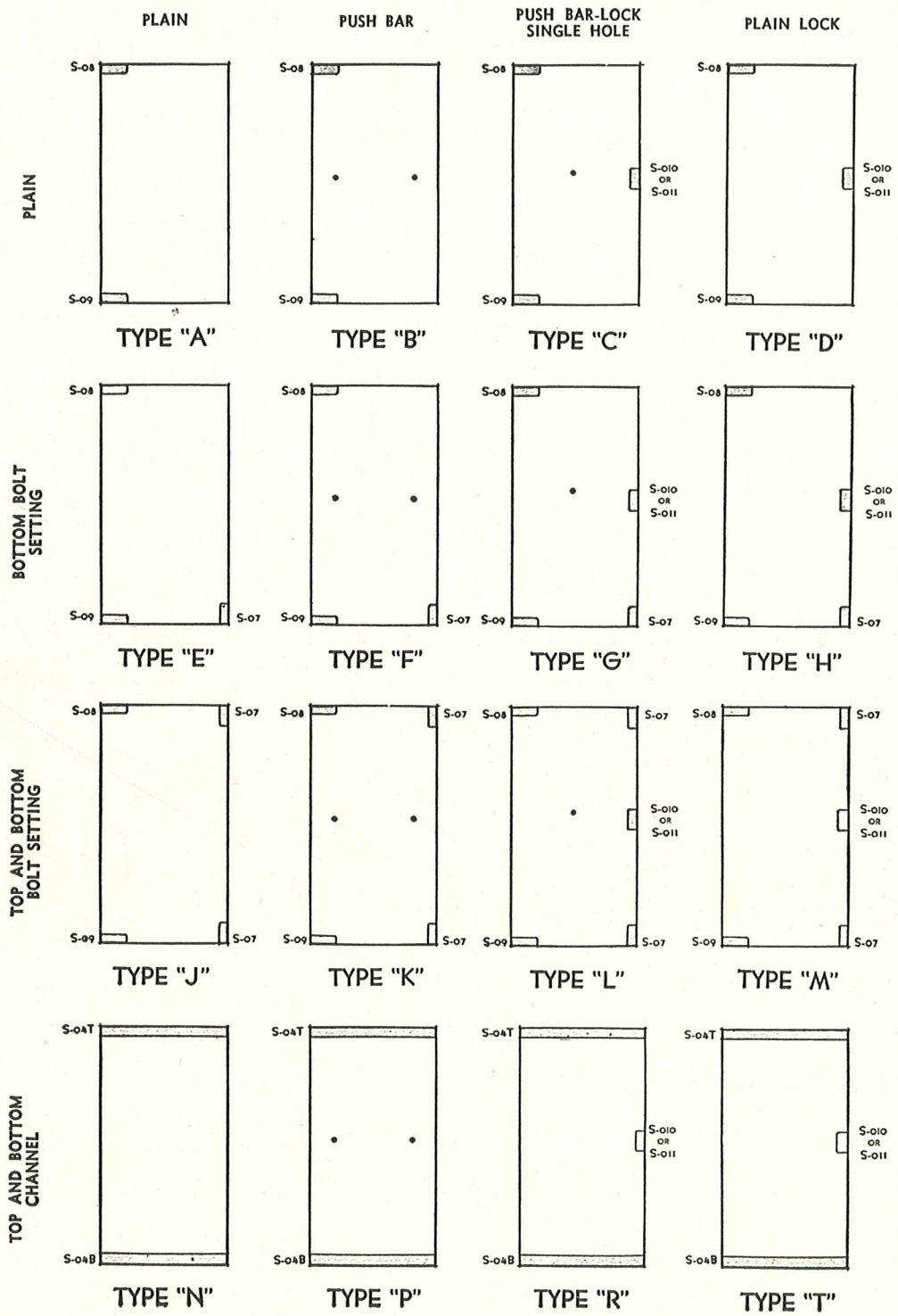
TYPICAL INTERIOR ELEVATION
ILLUSTRATING UNIT TYPE FITTINGS

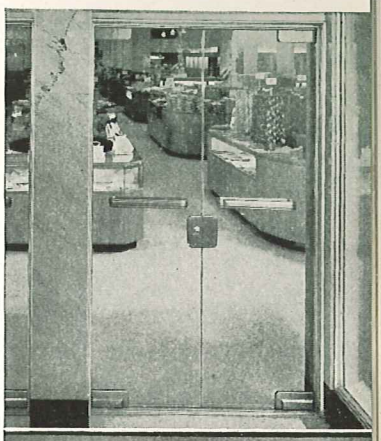


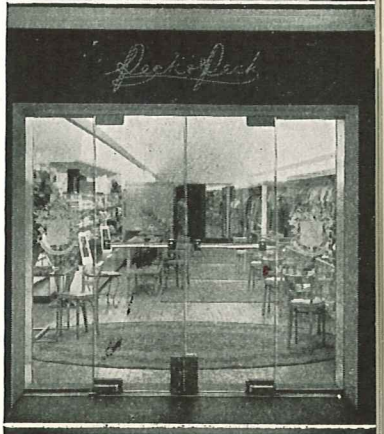
TYPICAL INTERIOR ELEVATION
ILLUSTRATING CHANNEL TYPE FITTINGS

HERCULITE DOORS

standard types







STORE FRONTS AND STORE FRONT METAL

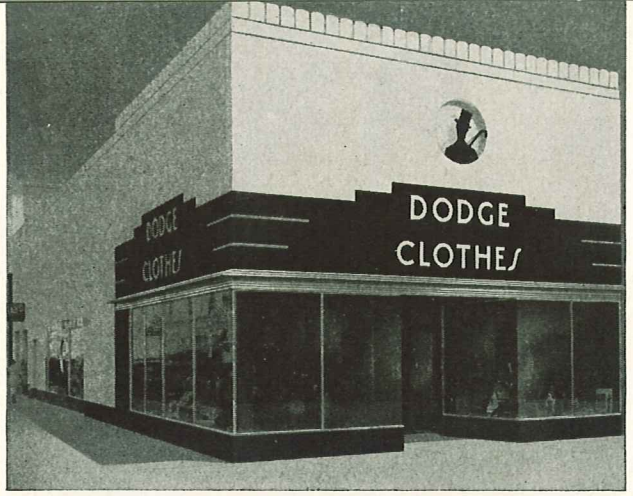
Typical of building owners and retail merchants today is an intense interest in store modernization, as a means of improving business volume and profits.

A few examples of installations are shown here to give some idea of the type of modernization work which has proved most effective. As may be observed, some of these fronts have been given a conventional treatment, whereas others incorporate the "Open" styling in which the store interior is on display.

Booklets containing complete information on the uses of Pittsburgh Products for store fronts and interiors will be furnished on request. We suggest that you take advantage of our consultation, estimating and installation services. Quotations will be submitted upon request covering both material and labor requirements.

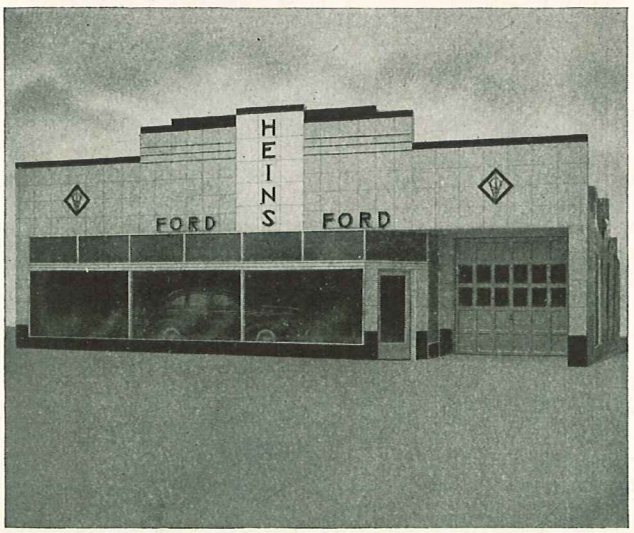
When ready to modernize your store, we recommend that you consult an architect to help you plan an economical, well-designed job.

The store interior is on display through this "open" type front which exemplifies the new trend in store design. Architect: John Matthew Hatton.



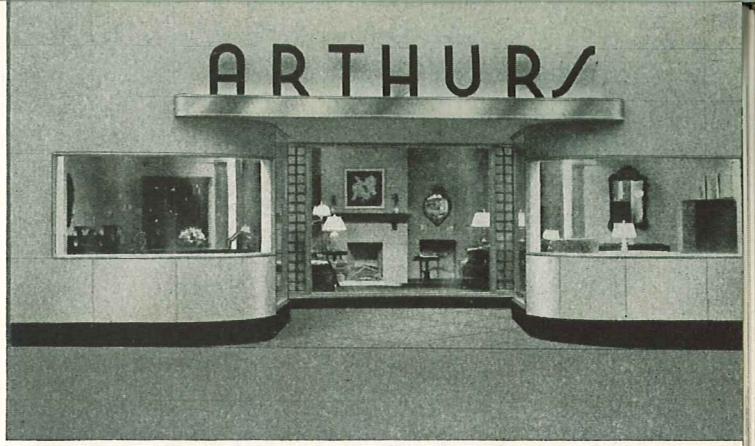
Products used: Carrara; Polished Plate Glass; Tapestry Glass; Pittco Metal. Architect: M. O. Carder.

Products used: Carrara; Polished Plate Glass; Pittco Metal. Architect: Stiles O. Clement.



Products used: Carrara; Tapestry Glass; Pittco Metal. Architect: Foster Scott.

Products used: Black Carrara; Polished Plate Glass; Pittco Metal.



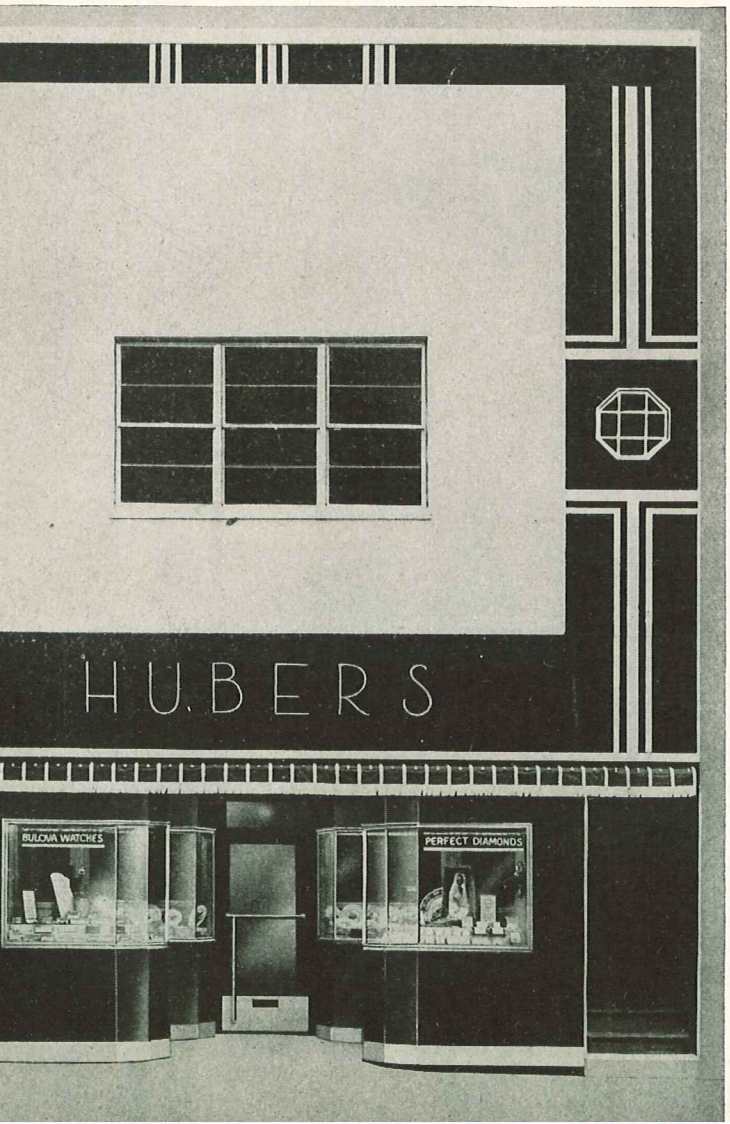
Products used: Wine and Gray Carrara; PC Glass Blocks; Polished Plate Glass; Pittco Metal. Architect: Engineering Service Corp.

Products used: Carrara; Polished Plate Glass; Pittco Metal.

Products used: Carrara; Polished Plate Glass; Pittco Metal. Architects: Grassold & Johnson.

Products used: Carrara; Polished Plate Glass; 6″ and 12″ Argus PC Glass Blocks; Pittco Metal. Architects: McClintock & Craig.

Products used: Carrara; Polished Plate Glass; Pittco Metal. Architect: Homer Harper.



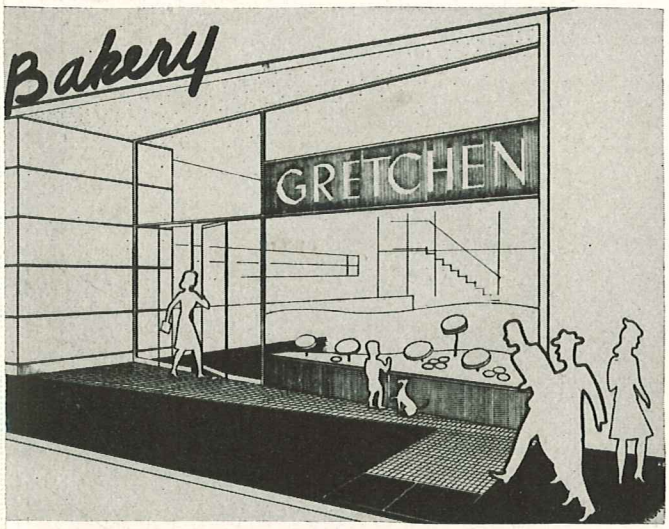
Products used: Polished Plate Glass; Pittco Metal. Architects: Thalheimer & Weitz.

Products used: Carrara; Polished Plate Glass; Herculite Doors. Architects: Gruenbaum & Krummeck—Victor Gruenbaum.

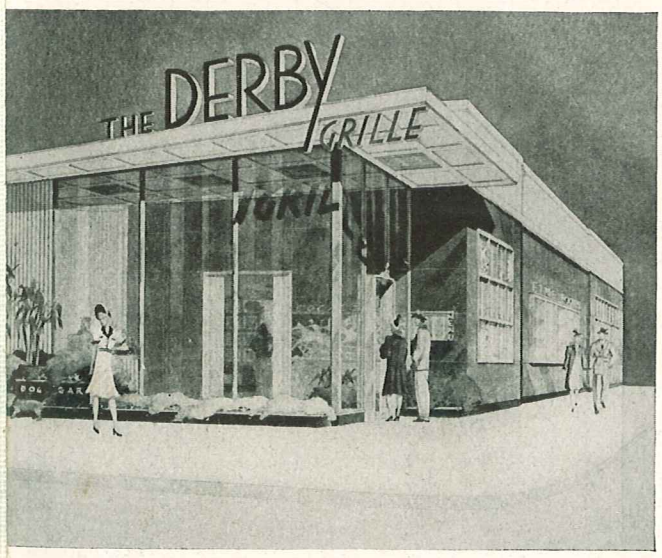
STORES OF THE FUTURE

To assist the merchant and his architect in developing modernization plans, we have presented here a group of designs executed by outstanding American architects, which represent their respective conceptions of the STORE OF THE FUTURE.

Admittedly advanced in treatment, these designs are intended primarily as a source for ideas which may be carried out in a variety of modifications, according to individual requirements. It is our sincere belief that the future trend in store architecture and arrangement will reflect in considerable degree the influence of designs such as these.

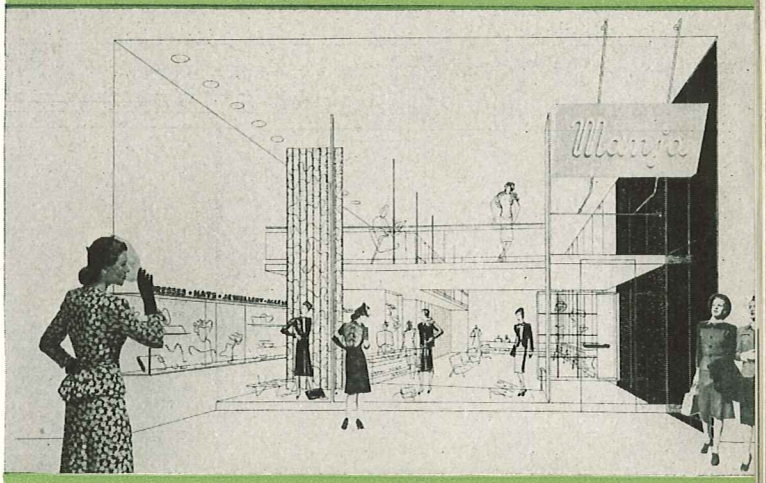


Designed by—Hervey P. Clark, Architect
210 Post Street
San Francisco (8), Calif.

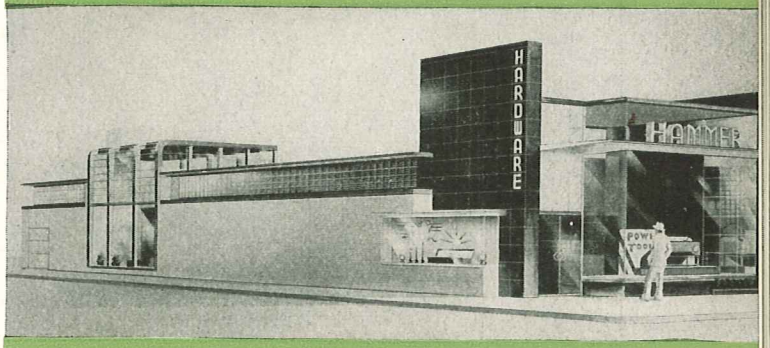


Designed by—Rowland H. Crawford, Architect
821 Highview Avenue
Manhattan Beach, Calif.

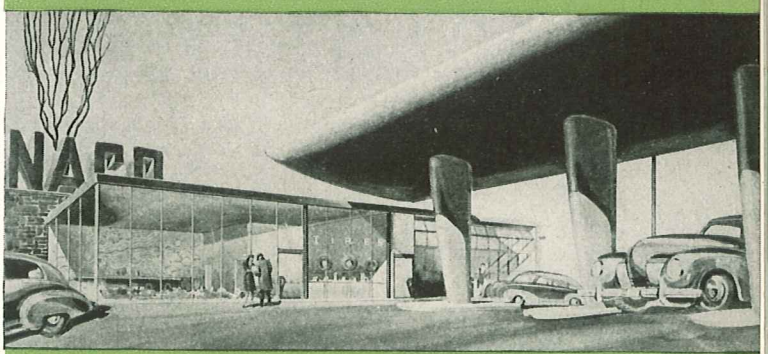
Designed by—Smith, Hinchman & Grylls, Inc., Architects
Marquette Building
Detroit (26), Michigan



Designed by—Glaser & Rado
25 Prospect Place
New York (17), N. Y.



Designed by—Silverman & Levy, Architects
1700 Sansom Street
Philadelphia (3), Pa.



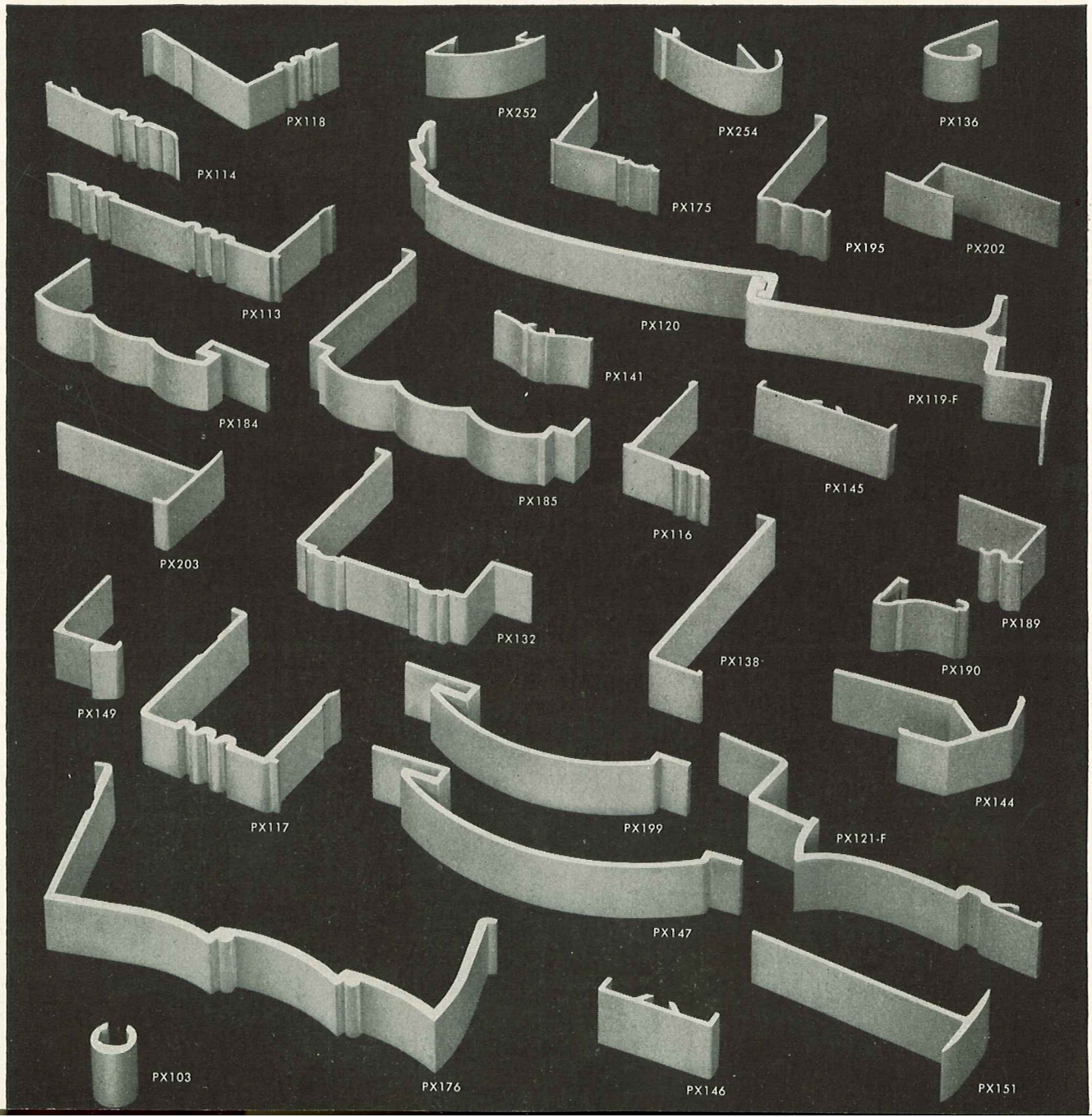
Designed by—Ely Jacques Kahn, Robert Allan Jacobs, Architects
22 Park Avenue
New York (16), N. Y.

PITTCO DE LUXE STORE FRONT METAL

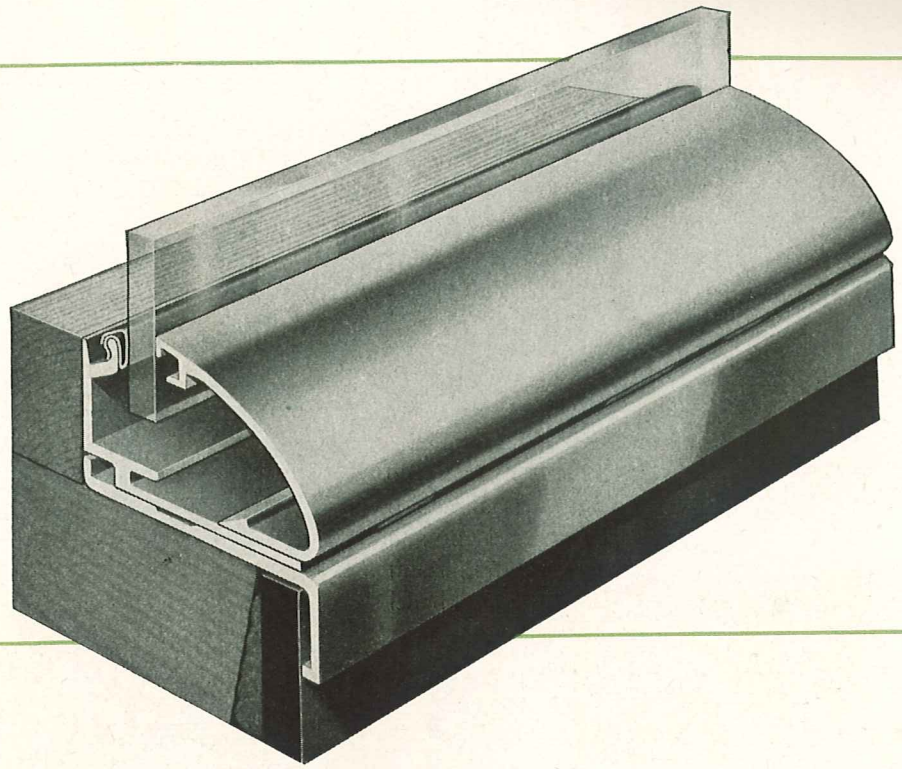
Pittco De Luxe is just what its name implies—the finest line of store front metal that inspired design, modern ingenuity and superior materials and workmanship can produce.

All exposed members are formed by the extruded process, insuring more perfect surfaces, better color, sharper lines, and more rigid construction.

There is an extruded Pittco De Luxe shape for practically every architectural or decorative need which might arise in connection with store front work. The lines are sharp, clean-cut, and clear in texture and color. The walls are sufficiently thick to withstand the common abuses to which store front metal is subjected.

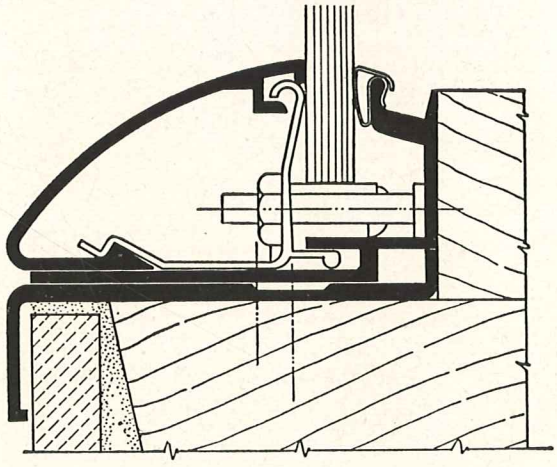


PITTCO DE LUXE STORE FRONT METAL

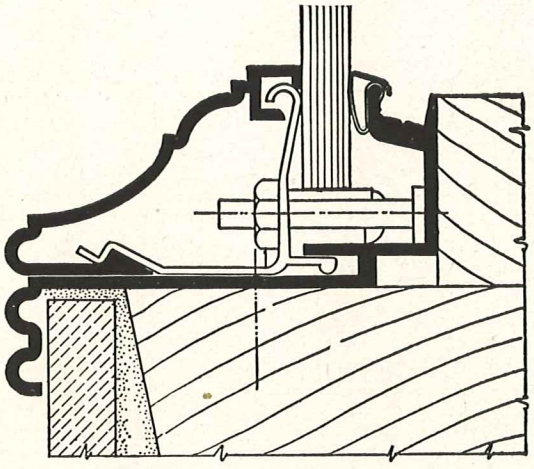


NO. 12-A SASH

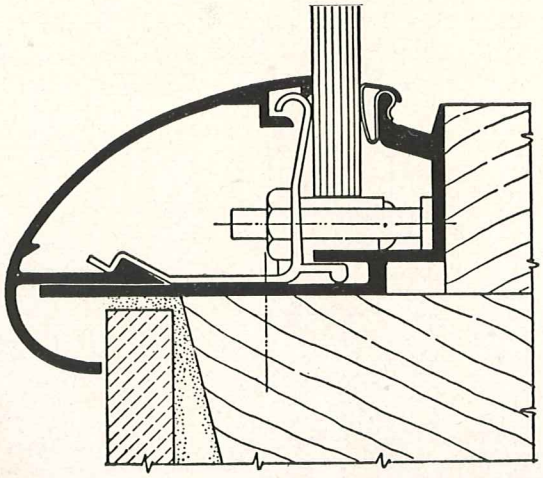
At left, a perspective view of No. 12-A sash with sill PX-112. Refer to actual size cross section below. This modification of a Pittco De Luxe sash has been used extensively by leading architects.



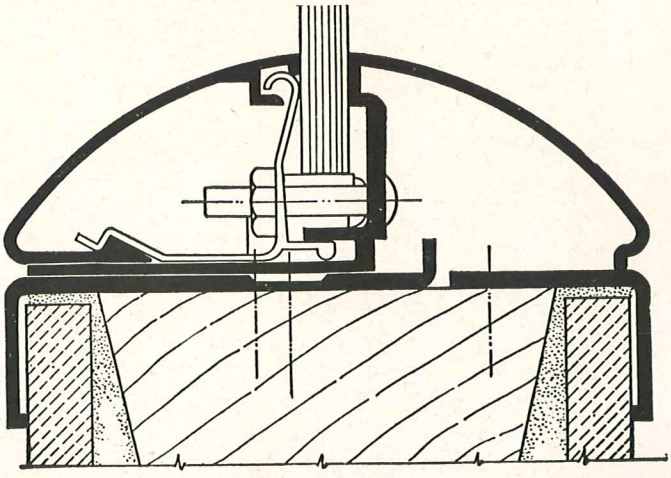
• No.12A SASH No.PX112 SILL •



• No.16 SASH No.PX 256 SILL •



• No.12B SASH USE PX218 AT HEAD •



• No.15 DOUBLE FACE SASH •

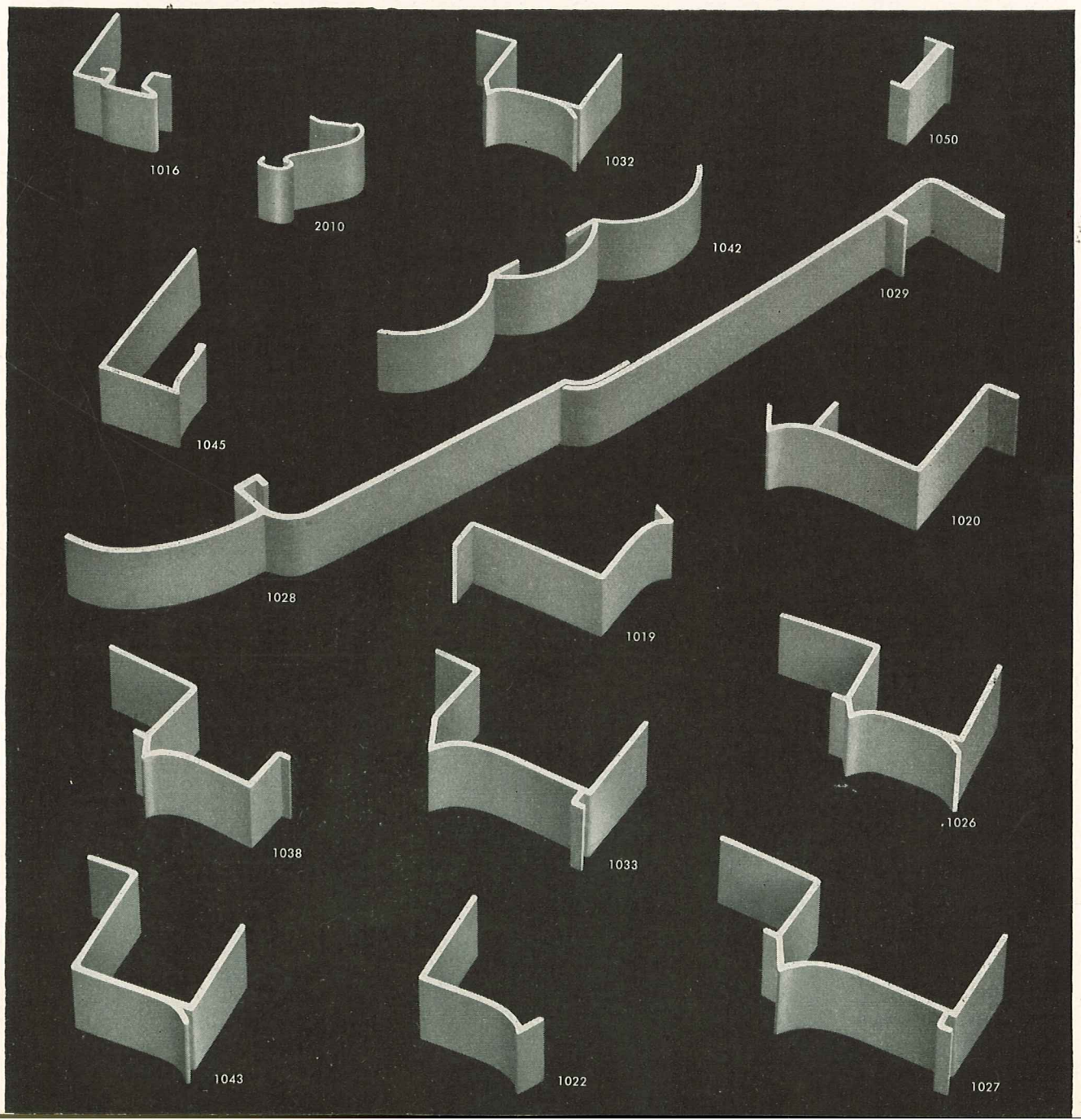
APPROPRIATE FOR OPEN DISPLAY WINDOWS AND PARTITIONS WITH GLASS PANELS.

PITTCO PREMIER STORE FRONT METAL

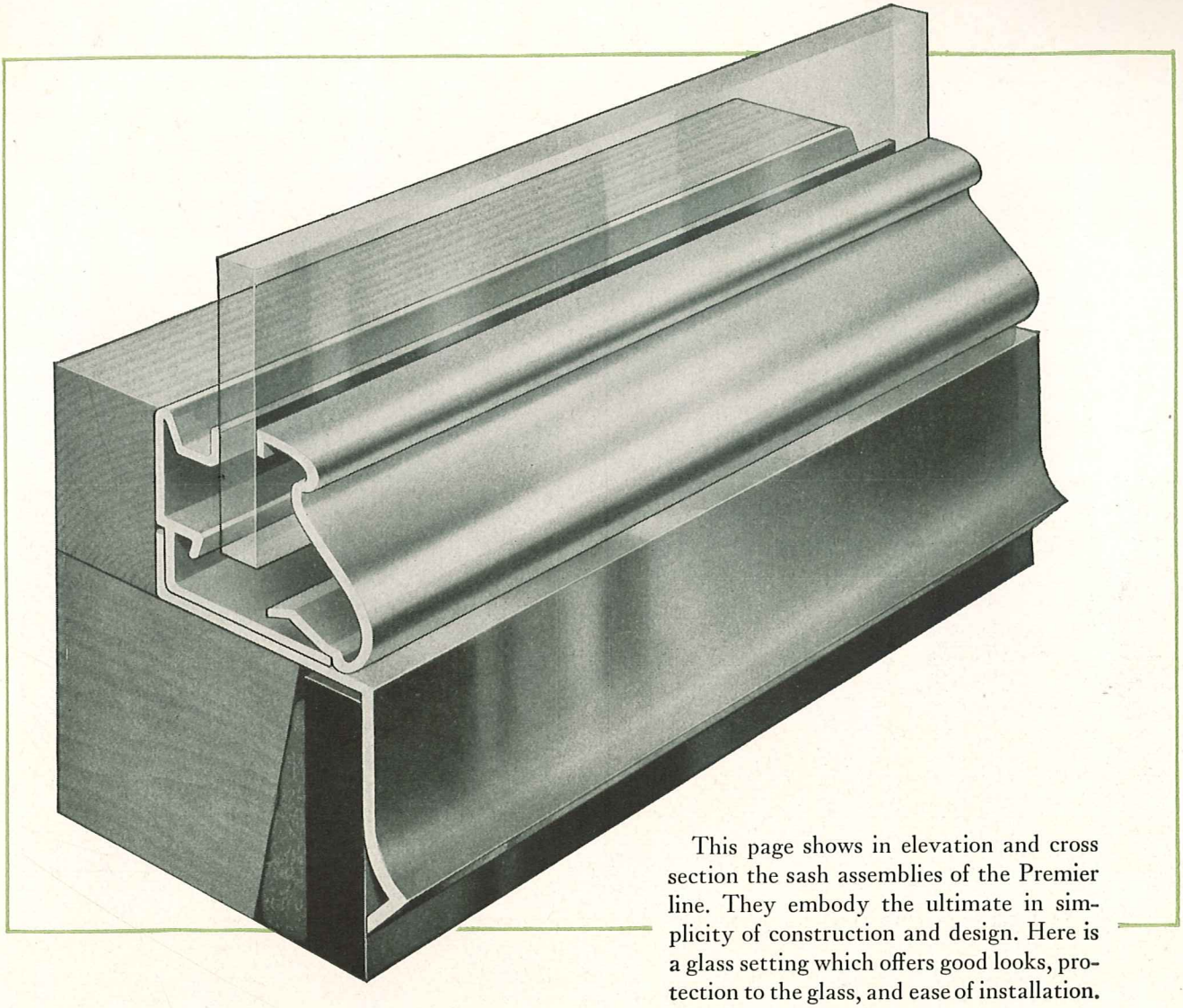
Pittco Premier is a new lightweight store front metal of outstanding beauty and versatility. It is a valuable contribution to the modern science of store display, designed to create a harmonious relationship between individual members in the line. Advanced principles of design meet every demand for strength and effective service.

PITTCO PREMIER

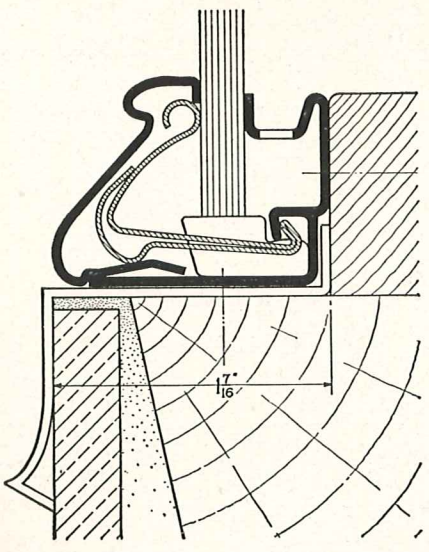
This photograph shows the pleasing relationship that exists between each Premier molding. Note the absence of extraneous lines. These shapes can be combined into assemblies to meet practically all store front requirements. Of particular interest is the pleasing balance of light and shadow, an effect that will blend well with any architectural style in modern store front construction.



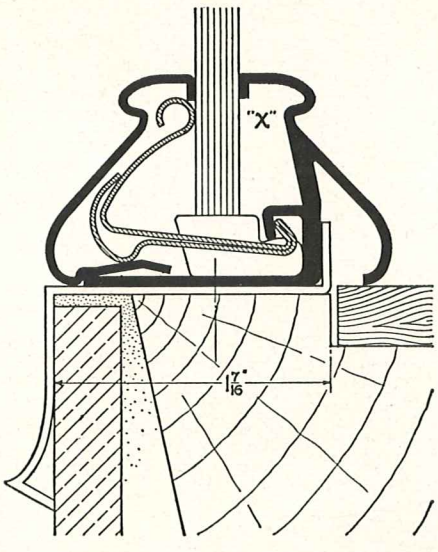
PITTCO PREMIER STORE FRONT METAL



This page shows in elevation and cross section the sash assemblies of the Premier line. They embody the ultimate in simplicity of construction and design. Here is a glass setting which offers good looks, protection to the glass, and ease of installation.



No. 70 Sash. A general purpose sash that can be set from the outside quickly, safely, and securely.



No. 72 Sash. For open display windows, doors, and partitions. When reversed for inside setting, use caulking or putty at "X."

LAMINATED GLASS

Duplate · Duolite · Aerolite · Multiplate

In the formation of laminated glass, two or more sheets of glass with a layer or layers of tough, transparent plastic sandwiched between are cemented into one unit by the application of heat and pressure.

The factor provided by laminated safety glasses is directly dependent on the perfection of methods used in effecting a uniform, tight bond between glass and plastic, and upon the toughness and elasticity of the plastic used. Thus, although laminated glass will crack when struck with sufficient force, the cracked composite structure will bend and give, due to the elasticity of the plastic which cushions the blow and, at the same time, holds firmly to the cracked glass, preventing sharp pieces from flying.

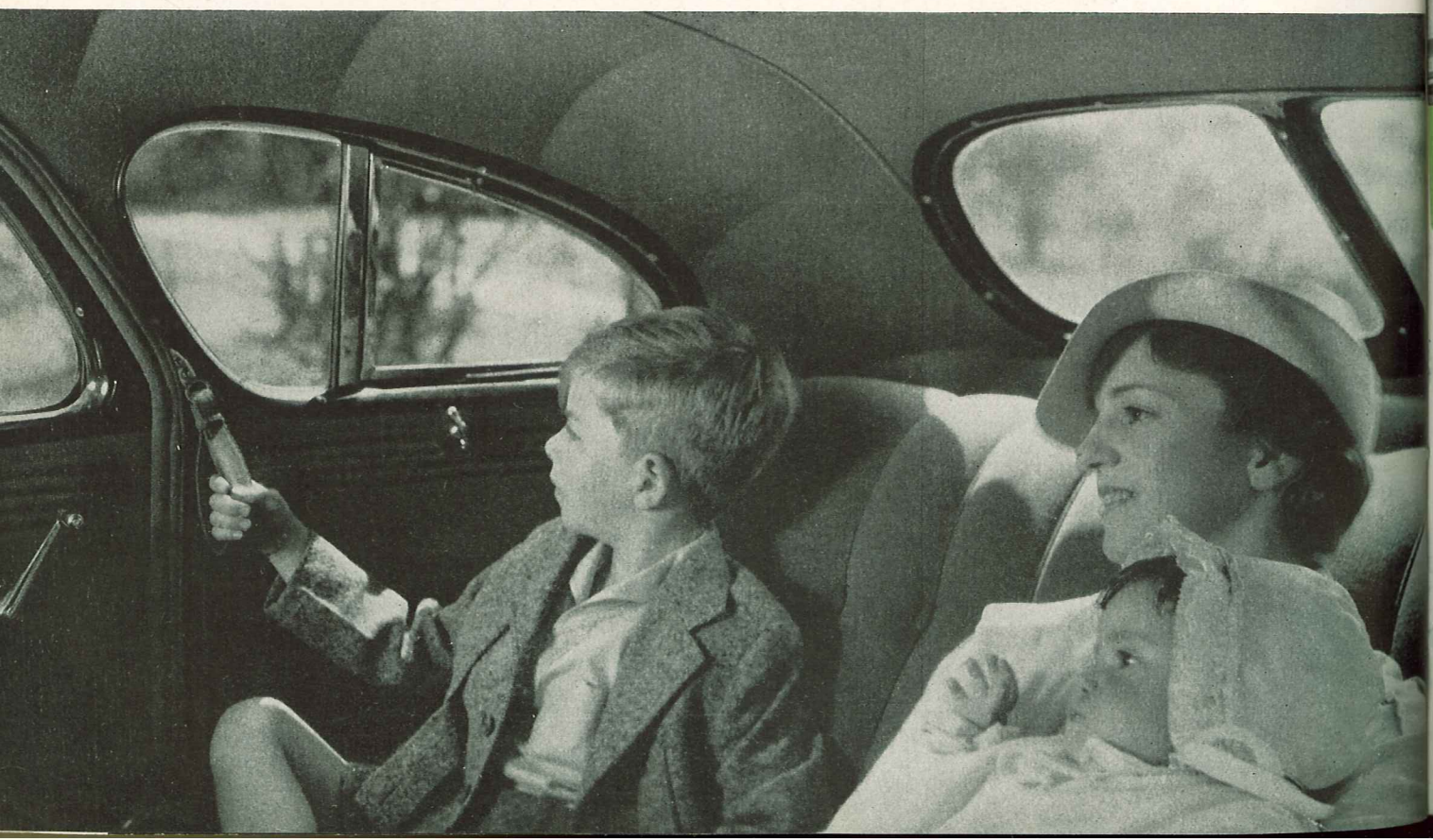
Laminated glasses manufactured by the Pittsburgh Plate Glass Company are made with Hi-Test Plastic which retains far greater elasticity at all temperatures than other types of plastics, thus giving to the laminated glass correspondingly greater resistance to breakage.

Bent Laminated Glass

Duplate, Duolite, and Aerolite Safety Glasses can be obtained in practically all standard bends. However, it is preferable to use Duplate Safety Plate Glass where bending is required as it is essential to start with the finest plate glass in order to insure a satisfactory finished bent glass.

Laminated Glass Products

Duplate Safety Plate Glass
Duolite Safety Sheet Glass
Aerolite Safety Sheet Glass
Heavy Safety Plate Glass
Multiplate Bullet-Resisting Plate Glass



DUPLATE (LAMINATED) SAFETY PLATE GLASS

Duplate Safety Plate Glass is the quality automobile safety glass. It is noteworthy for the accuracy of vision it affords and for its mirror-like beauty. Nearly all of our automobile equipment business calls for this fine laminated plate glass because car owners have been accustomed to plate glass ever since the first automobiles were put on the road.

Duplate consists of two pieces of polished plate glass, laminated with an interlayer of plastic. It affords true vision comparable to a single piece of homogeneous plate glass, thus lessening eyestrain and fatigue from long periods of driving. Duplate is made with Hi-test Plastic, which, compared to regular types of safety glass, is four times as resistant to breakage at 0°F., and two to two and one-half times as resistant to breakage at all temperatures from 0°F. to 110°F.

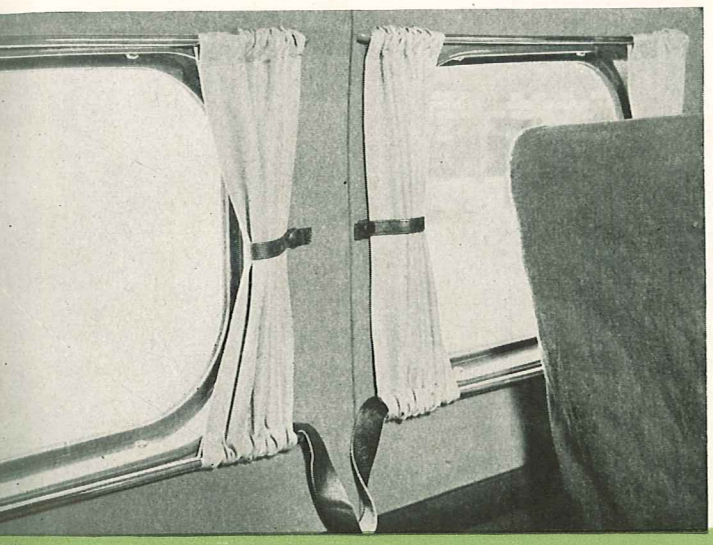
RECOMMENDED USES

Automobile Glazing	Speedboat Shields
Airplane Glazing	Safety Table Tops
Bus Glazing	Steam Gauge Shields

Protecting Shields in Laboratories

WEIGHT (uncrated) 3.25 lbs. per square foot.

MAX. SIZE ¼" ----------48" x 84"



Modern transportation requires the protection and the clear, accurate vision afforded by Duplate Safety Plate Glass.

Whether used in airplanes or automobiles, trucks and busses, Duplate Safety Plate Glass provides the highest standard of quality.

HEAVY (LAMINATED) SAFETY PLATE GLASS

Heavy safety plate glass consists of two pieces of polished plate glass laminated with an interlayer of plastic. It affords true vision comparable to a single piece of homogeneous plate glass, provides maximum strength and safety for many commercial and industrial purposes.

RECOMMENDED USES

Protective Shields	Locomotive Windows
Crane Cab Windows	Toll Booths
Steam Gauge Shields	Airplane Glazing
Port Lights	Basketball Backboards

Pressure Chamber Windows

Weight (uncrated

11/32"	4.52 lbs. per square foot.
3/8"	4.93 lbs. per square foot.
13/32"	5.34 lbs. per square foot.
½"	6.58 lbs. per square foot.
5/8"	8.22 lbs. per square foot.
¾"	9.67 lbs. per square foot.
7/8"	11.52 lbs. per square foot.
1"	13.16 lbs. per square foot.

Maximum size (all thicknesses): 48" x 84"

Thicknesses

11/32", 3/8", 13/32", ½", 5/8", ¾", 7/8", and 1".

DUOLITE (LAMINATED) SAFETY SHEET GLASS

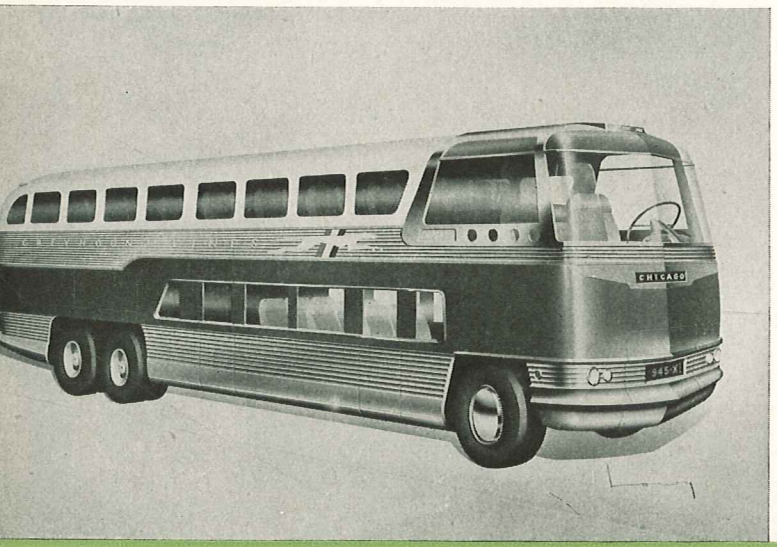
Duolite Safety Sheet Glass is the finest obtainable, due to the superior quality of Pennvernon Window Glass from which it is manufactured. Duolite is produced by laminating two lights of window glass together with an interlayer of Hi-Test Plastic, Duolite does not have the true vision and beauty of Duplate, but does have an equal safety factor and is recommended for use when the true vision and beauty of Duplate must be sacrificed in favor of lower cost.

Duolite, made from two pieces of single strength window glass, averages close to 7/32″ thickness. Duolite Combination Safety Sheet Glass, made from one piece of single strength and one piece of double strength window glass, averages close to ¼″ thickness. Duolite, made from two pieces of double strength window glass is 15/64″ to 19/64″ thick.

RECOMMENDED USES

Automobile Glazing	Streetcar Glazing
Bus Glazing	Airplane Glazing
Truck Glazing	
Railroad Car Windows, single and double glazed.	

WEIGHT (uncrated)	SS and SS..2.84 lbs. per square foot.
	SS and DS..3.08 lbs. per square foot.
	DS and DS..3.34 lbs. per square foot.
MAX. SIZE	(all thicknesses) .....48″ x 84″



A glimpse of the future in highway transportation is this model of a Greyhound Compartment Super Coach, which will be glazed with Safety Glass by "Pittsburgh."

There are "Pittsburgh" Laminated Safety Glasses designed to meet the requirements of all types of aircraft, large or small.

AEROLITE (LAMINATED) SAFETY SHEET GLASS

Aerolite is the thinnest safety glass now being made, having an overall thickness of approximately ⅛″. Its use is almost entirely limited to places where lightness of weight is paramount, or where lack of space necessitates a narrow channel, such as in airplanes, rear lights of convertible cars, etc.

Made from two sheets of selected photo glass and the usual center plastic sheeting, Aerolite is only half as thick as Duplate, but it is made under the patented Creighton Fluid Process and is exceptionally long lived.

Although it is recommended that Duplate or Duolite be used wherever possible, Aerolite is ideal where necessity for saving in weight or space calls for a thin safety glass.

RECOMMENDED USES

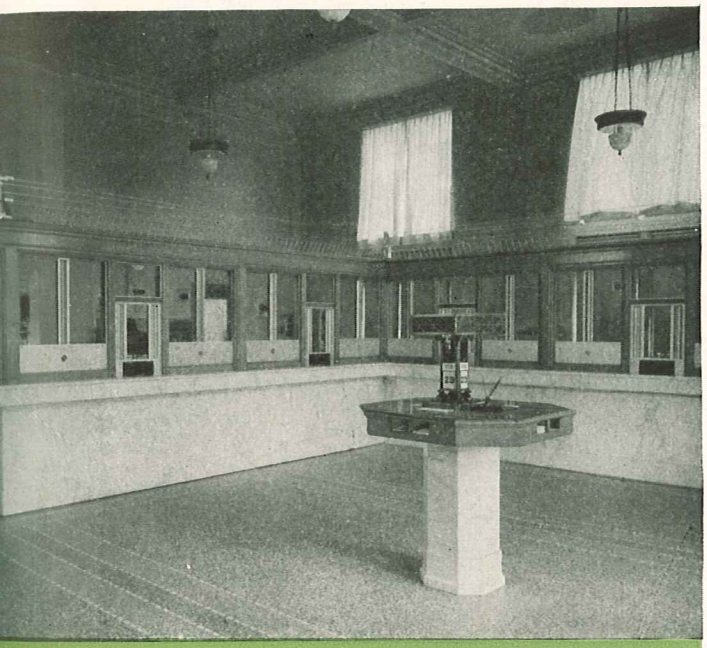
Airplane Glazing	Bus Glazing
WEIGHT (uncrated)	1.62 lbs. per square foot
MAX. SIZE	⅛″ .....32″ x 42″

MULTIPLATE BULLET-RESISTING PLATE GLASS

MULTIPLATE
X
PITTSBURGH
PLATE GLASS COMPANY

Multiplate is exactly what its name implies. It is a laminated glass of three to five pieces of polished plate glass with a sheet of clear, strong plastic material between each plate. The whole is cemented together by the application of heat and pressure, making a solid transparent plate built to resist bullets from the heaviest side arms as well as sub-machine guns and high-powered rifles.

Usually Multiplate installations require additional fixtures, such as gunports, deal trays, etc. Although the Pittsburgh Plate Glass Company does not manufacture these devices, we can put the customer in touch with the manufacturers.



The use of Multiplate Bullet-resisting Plate Glass offers vital protection against Bandit Guns.

A typical Multiplate-equipped Police Cruiser showing Multiplate windshield and windows pierced with gunports.

RECOMMENDED USES

Protection against Firearms	Crane Cab Windows
Banks	Speedboat Shields
Money-Collecting Trucks	Steam Gauge Shields
Airplane Glazing	Penal Institutions
Police Cars	Toll Booths
Army Cars	Protective Shields

Pressure Chamber Windows

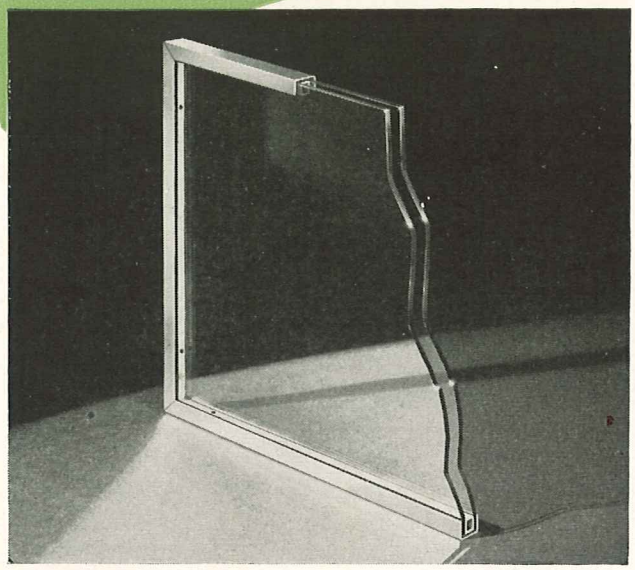
PHYSICAL CHARACTERISTICS:

Thickness	Thickness Tolerance	Dimension Tolerance	Approximate Weight (uncrated) Per sq. ft.
Standard Multiplate			
¾″	Plus 1/16″ Minus 1/16″	Plus 0 Minus ⅛″	9.71 lbs.
⅞″	Plus 1/16″ Minus 1/16″	Plus 0 Minus ⅛″	11.36 lbs.
1″	Plus 1/16″ Minus 1/16″	Plus 0 Minus ⅛″	13.01 lbs.
Super Multiplate (Listed by Underwriters' Laboratories)			
1-3/16″	Plus 1/16″ Minus 1/16″	Plus 0 Minus ⅛″	14.88 lbs.
Hi-Resist Multiplate (Listed by Underwriters' Laboratories)			
1-9/16″	Plus 1/16″ Minus 1/16″	Plus 0 Minus ⅛″	20.04 lbs.
Hi-Power Multiplate (Listed by Underwriters' Laboratories)			
2-3/32″	Plus 3/32″ Minus 3/32″	Plus 0 Minus ¼″	27.97 lbs.
Heavy Multiplate			
2½″	Plus 3/32″ Minus 3/32″	Plus 0 Minus ¼″	33.03 lbs.
3″	Plus 3/32″ Minus 3/32″	Plus 0 Minus ¼″	39.63 lbs.

TWINDOW

TRADE MARK

The window with *Built-in* insulation



What TWINDOW is

Twindow Insulating Units are completely prefabricated and consist of two or more pieces of glass enclosing a small hermetically sealed air space. Hollow aluminum tubing separates the pieces of glass. The entrapped air is at atmospheric pressure. It is dehydrated initially by means of a drying agent within the spacer tubing, which has access to the air space through the holes adjacent to the internal corners. This desiccant provides added insurance against the slightest vapor diffusion.

The entire edge of each Twindow Insulating Unit is encased in a stainless steel channel. This channel protects the seal as well as the edges of the glass during handling and provides a firm and even edge for installing.

WHAT TWINDOW DOES

- *Reduces heating costs.*
- *Permits the use of larger windows.*
- *Virtually prevents condensation.*
- *Minimizes cold downdrafts at windows.*
- *Adds to comfort and health the year 'round.*
- *Decreases load on air-conditioning equipment.*
- *Helps maintain desired temperature and humidity levels.*
- *Installs as simply as a single pane of glass.*
- *Requires cleaning on only two surfaces.*
- *Combines ideally with PC Glass Block construction.*

Glass combinations

The glass used in the standard Twindow Unit is polished Plate Glass. For special purposes, however, Twindow Units can be readily made up of other types of glass or combinations of glass, of which the following are examples:

1. Solex Heat-absorbing Plate Glass, together with regular Polished Plate Glass, resulting in an appreciable reduction in the transmission of Solar heat.
2. Water White Plate Glass, permitting true color definition with maximum clarity of vision.
3. Hi-Test Duplate, Duolite and Aerolite laminated Safety Glasses, affording added protection and safety from impact.
4. Herculite Tempered Plate Glass, providing strength (about four times that of Plate Glass) and impact resistance.
5. Polished Wire Glasses, providing an efficient fire retardant.
6. Heavy Polished Plate Glasses, ranging from ⅜" to 1¼" giving strength with good vision.
7. Figured Ornamental Glasses with numerous patterns, permitting effective illumination — translucency without transparency—and diffusion of light.
8. Sand-blasted Finish of one surface or to a line, providing semi-opacity and light diffusion.
9. Blue and Flesh Tinted Plate Glasses, offering decorative and color possibilities.

10. Pennvernon Window Glass and Pennvernon Heavy Sheet Glass, where openings to be glazed are small and where maximum clarity of vision is not of paramount importance.

Qualities

"Glazing" Quality Polished Plate Glass, "A" Quality Pennvernon Window Glass and "Standard" Quality Rolled Glass will be used in all Twindow Units.

Air spaces

Either ¼" or ½" air space will be furnished at the same price, with the recommendation for use of ¼" except where the 5 to 10% additional insulation value of a ½" air space is important. Rabbet width and glazing limitations should usually determine the air space dimension.

Edge construction

Twindow Units are protected with a light-gauge stainless steel channel (.015 to .020) with the channel legs extending ⅜" inwards on the surface of the glass from the base around its periphery. The smooth protected edges make for ease of handling and installation.

Patterns

Twindow Units can be supplied in most combinations of straight edges. Write for special quotations and information about ability to supply Twindow with curved edges.

Bent shapes

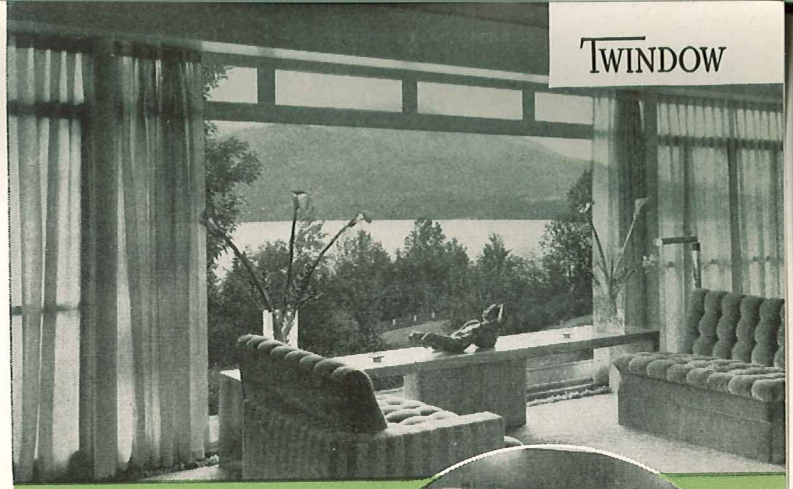
Simple cylindrical bends can be fabricated within certain limitations. Prices and details will be supplied on application.

Refrigerated display cases

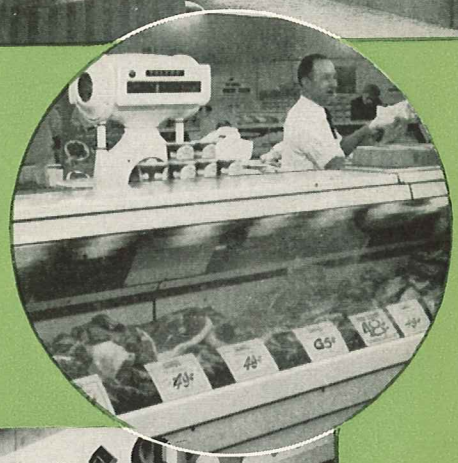
Combining insulation with clear vision, Twindow Units containing two or more pieces of glass are ideal for refrigerated flower, candy, meat, produce and frozen food cases. As the degree of refrigeration determines the number of pieces of glass required in a unit, it is suggested that inquiries be sent to us until specialized literature is available, stating the application and temperature to be maintained within the case.

Test chamber multiple glazing

Clear vision inspection panels in Experimental Test Chambers operating at extremely low temperatures, high and low pressures, and other unusual conditions, successfully utilize the high insulating value of multiple-glazed Twindow Units. Each application of this kind should be referred to us, accompanied by the pertinent operating data, for a specific recommendation.

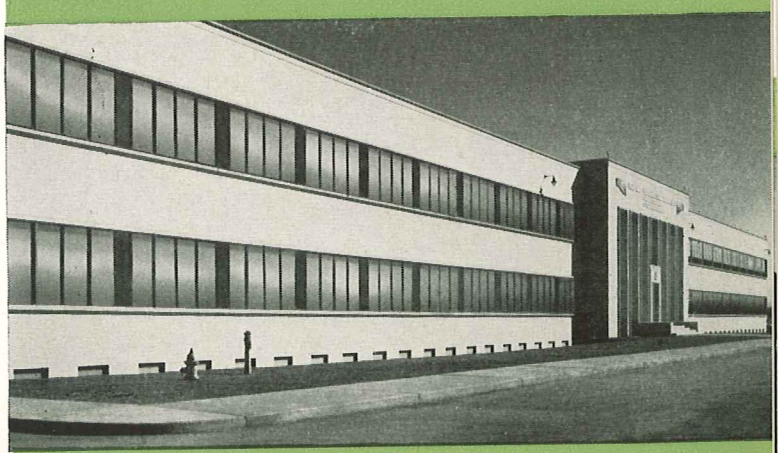


A minimum of cold downdrafts at picture windows glazed with Twindow.



Refrigerated cases — Customers always have a clear view of refrigerated products displayed in cases which are glazed with Twindow. No dirt or moisture can enter Twindow's sealed-in air spaces.

The excellent insulation provided by Twindow units recommends their use in the glazing of large areas.



Industrial Buildings—When Twindow is used for factory windows, manufacturing processes requiring uniform temperatures and humidities can be carried on without condensation on windows or sacrifice of daylight vision.

INSTALLATION

Generally speaking, all sash now available was designed for a single thickness of glass. Several manufacturers of metal and wood sash have introduced new designs to accommodate the extra thickness and weight of Twindow, while others are contemplating similar action.

In the following discussion of sash, the glazing rabbet dimensions referred to are defined as:

(a) Height or depth—the vertical or short dimension (in a normal sill section).

(b) Width—the horizontal or long dimension (in a normal sill section).

The height of the Twindow Unit stainless steel channel border is ⅜". Glazing clearances of ⅛", 3/16" or ¼", depending on Twindow size, consequently require a minimum theoretical rabbet height of ½" or ⅝" to hide completely the metal edge from the sight opening.

Steel sash

Existing steel sash varies in rabbet width from ¾"—⅞"—1⅛"—1⅜", depending on the type of window and particular style of the manufacturer. Twindow Units constructed with ⅛" glass and a ¼" air space should not be glazed in a ¾" rabbet sash. However, they will glaze as a tight fit in a ⅞" rabbet sash, and will glaze with ease in 1⅛" and 1⅜" rabbet sash. Twindow Units constructed with ¼" glass and a ¼" air space may be satisfactorily glazed in 1⅛" and 1⅜" rabbet sash. However, we recommend the use of steel sash with a 1⅜" rabbet whenever possible.

Movable wood sash

While regular 1⅜" thick wood sash is considered too thin to accept Twindow Units, 1¾" sash specially rabbeted to provide a wide, deep rabbet is very satisfactory.

Stationary windows set in wood

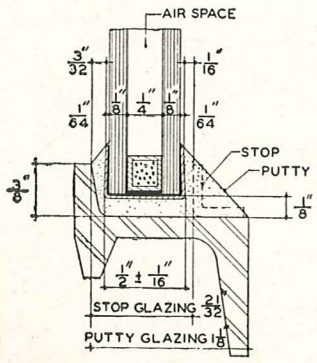
Difficulty should not be encountered in the glazing of large fixed Twindow Units, such as picture windows, as most sash of this size is special and can be milled with a wide, deep rabbet to provide adequate glazing space.

Twindow store front units

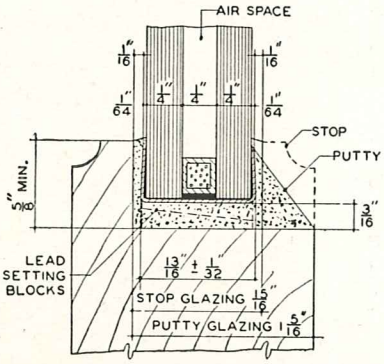
Recommendations will be made by the Store Front Department for setting members to meet the existing conditions.

GLAZING PROCEDURE

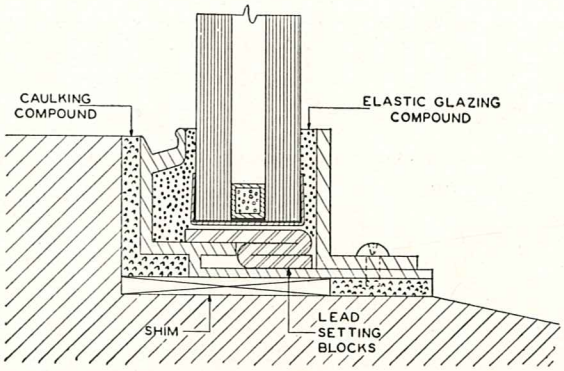
1. All openings must be square and free from glazing obstructions.
2. If Twindow Units are to be installed in standard steel sash, special Twindow Unit glazing clips are recommended, although the regular steel sash clips may be used if given an additional bend to allow for the extra Twindow thickness.
3. Twindow Units may be glazed with any proven type of steel sash or wood sash, linseed oil base putty or elastic glazing compound.
4. Although shims or setting blocks are always helpful in equally spacing a unit in an opening, they are not required on small, lightweight units, such as regular steel sash sizes. Twindow Units 36" to 60" in width, and/or weighing 50 to 80 lbs. should be set on two lead or leather setting blocks 2" long and as wide as the unit is thick. These blocks should be placed ¼ of the width in from each end of the unit. Additional setting blocks (complementary wedge type) should be spaced evenly under longer or heavier units to assure proper distribution of load.
5. Use approximately 1/16" back putty on all units.
6. Bed putty the sash.
7. Each Twindow Unit has a label, "Top-Inside". Place the unit in position accordingly.
8. All small openings should be measured to allow ⅛" glazing clearance on all sides, while larger openings should allow a clearance of 3/16" to ¼". Distribute this clearance proportionately. Never force unit into place.
9. Point up all voids around the unit before face puttying.
10. In setting Twindow Units in wood sash, the glazing points should be set by hand.



TWINDOW IN STEEL SASH



TWINDOW IN WOOD SASH



TWINDOW STORE FRONT UNIT

	DIMENSIONS						WEIGHTS
	Glass Thickness	Air Space	Max. Size Approx.	Dimensional Tolerances	Unit Thickness		Approximate Average Net Weights Per Sq. Foot
					¼" Air Space	½" Air Space	
DOUBLE GLAZED	⅛" ¼"	¼" or ½" ¼" or ½"	12 Sq. Ft. 70 Sq. Ft.	+or—1/16" Under 36" +⅛"—1/16" 36" and Over +3/16"—1/16"	½" ±1/16" 13/16" ±1/32"	13/16" ±1/32" 1 1/16" ±1/32"	3½ pounds 7 pounds
TRIPLE GLAZED	⅛" ¼"	¼" or ½" ¼" or ½"	12 Sq. Ft. 35 Sq. Ft.	+or—1/16" Under 36" +⅛"—1/16" 36" and Over +3/16"—1/16"	15/16" ±1/32" 1 5/16" ±1/32"	1 7/16" ±1/32" 1 13/16" ±1/32"	5¼ pounds 10½ pounds
QUADRUPLE GLAZED	¼"	¼"	35 Sq. Ft.	Under 36" +⅛"—1/16" 36" and over +3/16"—1/16"	1 13/16" ±1/32"		15 pounds

Ordering instructions

All openings must be square and free from glazing obstructions. Take-off sizes for small openings should allow ⅛" glazing clearance on all sides, while for larger openings a 3/16"—¼" allowance should be made.

In placing an order, state specifically the following:

1. Which dimension is width; and which the height.
2. Type and thickness of glass from which the Twindow is to be fabricated.
3. Thickness of the air space desired.
4. Any unusual operating conditions which might be encountered.

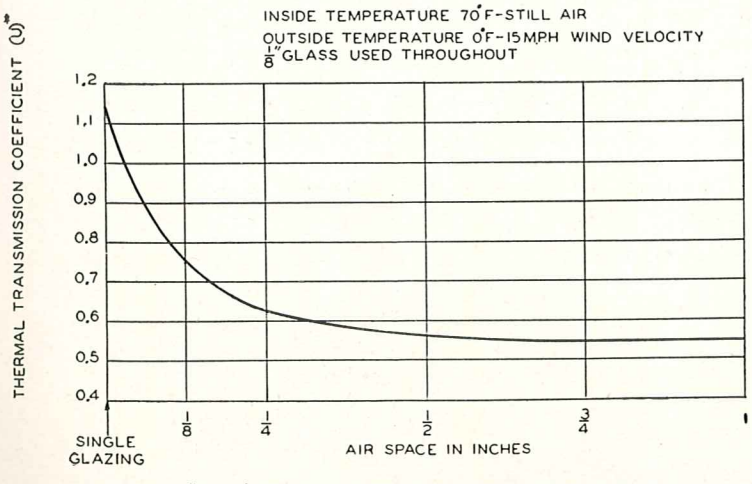
How to specify

Wherever shown on drawings and details, multiple-glazed insulated units shall be Twindows (hermetically sealed double or multiple glass units) as manufactured by the Pittsburgh Plate Glass Company. Each Twindow shall be identified by the manufacturer's label, which is to remain on the unit for the Architect's inspection.

Guarantee

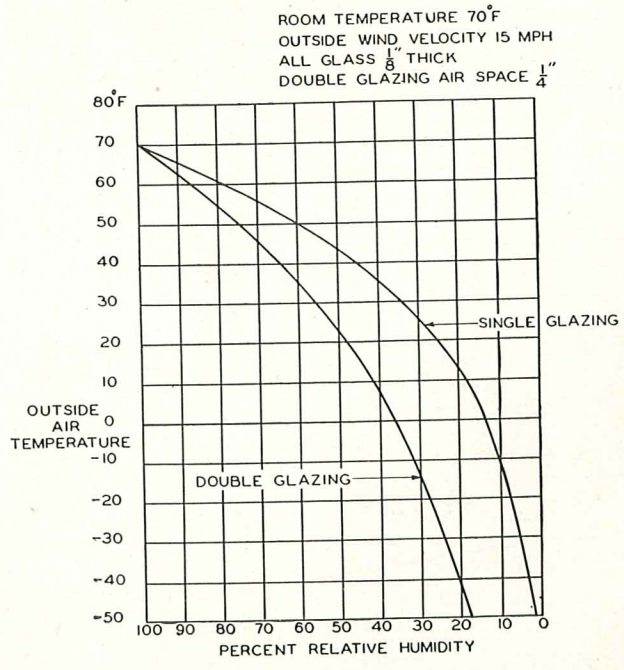
During a period of five (5) years after date of manufacture, Twindow Insulating Units are guaranteed not to develop, under normal conditions, material obstruction of vision as a result of dust or film formation on the inner glass surfaces. Any Units failing to comply with the terms of this guarantee will be replaced F.O.B. nearest shipping point to place of installation. This represents our maximum liability. This guarantee is effective only if installation is made in accordance with our specific instructions and does not apply to units damaged by improper handling or installation.

TWINDOW OVERALL THERMAL CONDUCTIVITY VARIATION WITH AIR SPACE THICKNESS



* B.T.U./SQ.FT./HR./DEGREE F. TEMPERATURE DIFFERENCE

OUTSIDE TEMPERATURE REQUIRED TO PRODUCE CONDENSATION ON ROOM SIDE GLASS SURFACE



PC GLASS BLOCKS

PC Glass Blocks offer advantages for every type of building . . . because they transmit daylight through an insulated wall.

Each PC Glass Block contains a sealed-in dead-air space that is an effective heat retardant. As a result, a panel of PC Glass Blocks contains a multitude of small insulating units—each block and the whole panel having a very low coefficient of heat transfer. This insulation permits the use of larger daylighting areas than would be practical or economical were single glazing employed. Glass blocks eliminate much of the wastefulness of ordinary windows — make buildings more comfortable and more efficient.

More Daylight

Better daylighting will play a big part in the buildings of the future. Homes, stores, public buildings, factories—all will use larger areas of glass to provide cheerful, well-lighted rooms. For better lighting has proved a valuable aid to comfort, attractiveness, and efficiency. With PC Glass Blocks you get an abundance of diffused daylight and with proper selection of pattern achieve control of the transmitted light.

Improved Appearance

PC Glass Blocks, while well suited for use with other decorative materials, are in themselves an interesting and flexible decorative medium. They help you design homes that are easier to sell—stores that attract customers—factories that present an appearance of efficiency and progressive management.

Better Temperature Control

Whether you want to keep your rooms warm or cool, PC Glass Blocks can help you. They have less than half the heat loss of ordinary windows, with insulation comparable to the best double-glazing. This results in more constant room temperatures, more freedom from the influence of outdoor temperatures, summer and winter.

Better Humidity Control

With the temperatures held more constant and with less moisture taken from the air by condensation on glass areas, the problem of humidity control is simplified. Where manufacturing processes are adversely affected by humidity fluctuations, this factor is very important.

Less Surface Condensation

Where surface condensation on window area is a problem, the use of glass blocks often proves advantageous. For moisture does not condense on the warm side of PC Glass Block panels except under unusually severe temperature and humidity conditions.

Increased Usable Floor Area

PC Glass Blocks not only insulate light-transmitting areas against outdoor temperature changes, but also eliminate drafts of cold air. They often make the outer floor areas more comfortable for room occupants and more usable for operation of precision equipment.

Aids Air Conditioning

The three chief aims of air conditioning—temperature control, humidity control, and cleansing of air—are all aided by the use of PC Glass Blocks. The insulation afforded by glass block panels saves money for operators of air-conditioning systems. Heat loss is less in winter—heat gain is less in summer. Humidity conditions are much less likely to be upset by condensation. Solar heat transmission and radiation are reduced. Dirt can't filter in—for each panel is a tightly sealed unit. The result is that less load is thrown on the equipment. It can do a better conditioning job, and savings in size of air-conditioning equipment are possible.

Dirt Infiltration Eliminated

In plants where foods, finely machined parts, or delicate fabrics are produced—in restaurants, hotels, or shops visited by a fastidious public—in homes where cleanliness is treasured—PC Glass Blocks are an ideal source of delight. For harmful dirt and grit can't filter through panels of glass blocks. This is especially important in regions where the atmosphere is smoky or dusty. Glass blocks keep out gases that may be offensive or may cause deterioration of equipment.

Easier to Clean

A whole panel of glass blocks is cleaned as one unit—not a small panel at a time. No muntins to clean—just a simple sweep of one smooth glass-and-cement area. Many maintenance men have found that satisfactory cleaning can be done simply by one man with a hose, and a long-handled brush. The translucent effect of glass block panels keeps them looking clean long after ordinary clear glass looks spotty or streaked from dirt.

Lower Maintenance Costs

With PC Glass Block panels for light-giving wall areas or partitions, maintenance costs are almost non-existent. No unsightly and dangerous corroded or rotted sash need be replaced. Once installed, the panel of glass and strong, clean mortar joints practically takes care of itself.

PC Glass Blocks make a permanent type of panel. Glass blocks are not easily marred or broken. Should replacement of an individual block be required, it can be done easily by a regular mason.

Privacy

Translucent glass blocks admit well-diffused streams of light—but they guard privacy. Unsightly views can be eliminated. Distracting views are shut off. There is greater concentration of vision on the things you want seen. Limited vision of general outdoor conditions can be had by inserting PC Vue Blocks in the panel.

Effective Sound Insulation

Glass block panels substantially reduce distracting and undesirable noise. Even in factory surroundings, offices can have quiet and privacy. And there's less chance of factory noises causing complaints from occupants of adjacent buildings.

Crushing Strength

Repeated tests, made on square wallettes laid up with PC Glass Blocks show a minimum panel compressive strength of 400 to 600 pounds per square inch of gross loaded area. This crushing strength is well above that of many accepted masonry constructions, and is entirely adequate to resist safely the forces created by conditions within the glass block panels themselves.

Glass block construction should never be used for load-bearing walls or panels. Adequate provision must be made for the support of construction above glass block panels, and expansion joints must be provided at head and jambs of all panels in exterior walls.

Bond Strength

PC Glass Blocks have a special grit-bearing, moisture-and-alkaline-resisting, plastic coating on all mortar edges which insures a complete and permanent bond between glass and mortar.

Wind and Weather Resistance

From wind pressure tests on PC Glass Block panels in area from 50 square feet (5′ x 10′) to 256 square feet (16′ x 16′), it has been found that any panel properly supported at its edges and within the area limits recommended will withstand a wind load of 20 pounds per square foot with a factor of safety of at least 2.7.

Under varied weather conditions, PC Glass Block construction has proved its durability. Panels tested by repeated cycles of heating, water spray, and freezing show no sign of cracking or other structural deterioration, although temperatures well above and below those encountered in any exposure have been used.

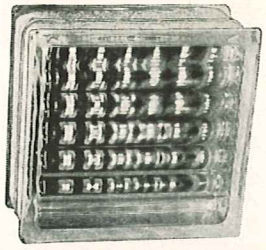
Easy Installation

A regular mason will have no trouble laying panels of PC Glass Blocks. And here's something every mason will appreciate. PC Glass Block edge construction forms a "key-lock" mortar joint, providing a full bed of mortar, yet permitting a visible joint of only about ¼″, resulting in a trim panel that is pleasing to the eye. And this "key-lock" joint is easier to handle in laying.

Light-transmitting panels of PC Glass Blocks add greatly to the exterior appearance of a building . . . whatever type of edifice it may be. And glass blocks serve a score of practical purposes, in addition.

PITTSBURGH PC CORNING

GLASS BLOCKS
standard patterns



ARGUS

Smooth outside faces, interior flutes, identical and assembled at right angles. A conventional pattern designed for general use, both decorative and utilitarian. May be laid with flutes vertical or horizontal on room side with equally pleasing and efficient results. When used in combination with corner or radial blocks, if pattern match is desired, the standard blocks must be laid with flutes horizontal on room side. High light transmission with good light diffusion. (Argus Parallel Flutes will be supplied, when specified, in 5¾″, 7¾″, and 11¾″ square blocks only.)

Supplied in: 5¾″, 7¾″, 11¾″ Square Blocks
5¾″, 7¾″ Corner Blocks
7¾″ Radial Blocks

DRUID

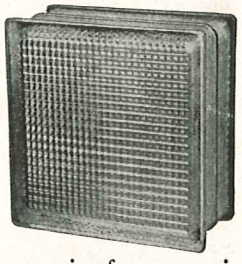
Narrow vertical flutes and etched border on both outside faces, horizontal flutes on both inside faces.

Supplied in: 7¾″ Square Blocks
7¾″ Corner Blocks
7¾″ Radial Blocks

DECORA

Smooth outside faces, asymmetric design on both interior faces. A decorative pattern ideally suited to harmonize with both modern and conventional design. May be laid without regard to pattern. High light transmission with irregular diffusion and high translucency.

Supplied in: 5¾″, 7¾″, 11¾″ Square Blocks
5¾″, 7¾″ Corner Blocks
7¾″ Radial Blocks

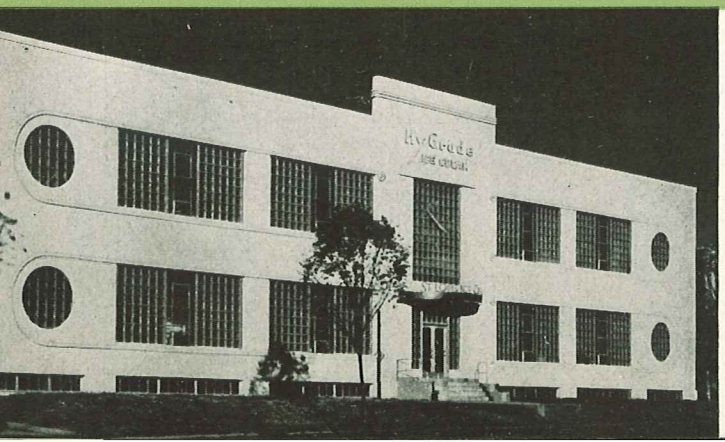


ESSEX

Horizontal spreading flutes and lightly etched borders on both exterior faces, vertical prisms on both interior faces. Specially designed for low light transmission. For use below eye level in panels containing Prism Light-Directing Blocks and on elevations subjected to severe exposure to direct sunlight where Prism Light-Directing Blocks are not adaptable. Must be laid with exterior flutes horizontal.

Supplied in: 7¾″ Square Blocks only.

The sparkling cleanliness of large glass block panels gives an impression that the plant interior is also neat and clean.



Daylight and good looks are two of the vital advantages PC Glass Blocks impart to this modern plant building.

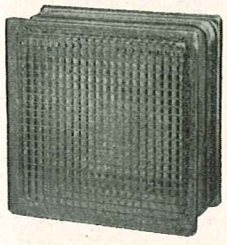
PITTSBURGH PC CORNING

GLASS BLOCKS
standard patterns and accessories

BRISTOL

Narrow vertical flutes, etched border on both outside faces, flat etched inside faces. Designed to provide softer, more diffused light. This block should be laid with exterior flutes vertical.

Supplied in: 7¾" Square Blocks
7¾" Corner Blocks
7¾" Radial Blocks

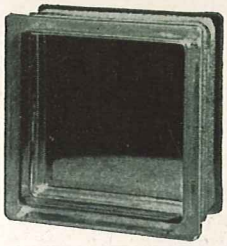


PRISM LIGHT-DIRECTING

Narrow vertical flutes and etched border on both outside faces, horizontal prisms on both inside faces, designed to control the direction of sunlight transmitted by the block and, under proper conditions, to provide improved natural illumination. By means of unlike prisms on the two inside faces, the greater part of the transmitted light is directed upward to provide ideal indirect daylighting. Can be set in one position only; block is marked to indicate correct setting. Must not be used below eye level. For lower portion of panel, below eye level, use Essex.

Supplied in: 7¾" Square Blocks only.

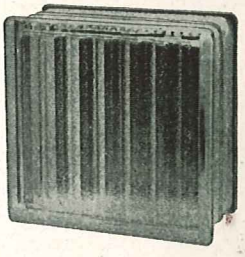
VUE



Clear, smooth interior and exterior surfaces to permit sufficient general vision of large objects or movements beyond the panel to prevent the "shut-in" feeling. Visibility of sharp details is not possible under most conditions. Provides high light transmission.

Supplied in: 7¾" Square Blocks only.

SAXON



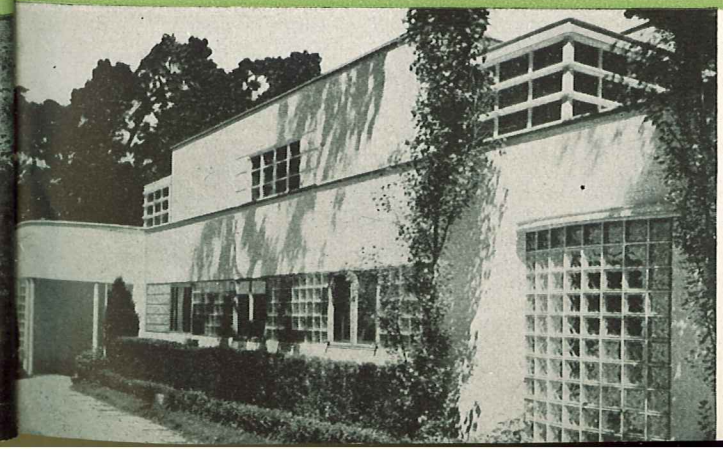
Narrow parallel reeds on both exterior faces parallel to wide flutes on both interior faces; both interior faces etched. Pleasing, uniform pattern. Should be laid with exterior reeds vertical. Diffusion and brightness reduction with good light transmission and maximum obscurity.

Supplied in: 5¾", 7¾", 11¾" Square Blocks
5¾", 7¾" Corner Blocks
7¾" Radial Blocks

PC Accessories

Wall Ties (Galvanized Welded Wire Mesh, 8' 0" lengths).
Expansion Strips (½" x 4" x 36").
Expansion Strips (½" x 3" x 36").
Wall Anchors (20 gauge perforated Galvanized Steel, 1¾" x 2' 0").
PC Asphalt Emulsion in 1-quart, 1-gallon, and 5-gallon containers.
Pittsburgh Waterproofing Compound NV-3389 in 1-quart, 1-gallon, and 5-gallon containers.

PC Glass Blocks are ideal for residential use, combining decorative beauty with practical advantages.



Panels of PC Glass Blocks in power plants provide plenty of daylight—with less heat loss and with complete privacy.

FIGURED, ORNAMENTAL, AND WIRED GLASS

The Pittsburgh Plate Glass Company provides the most satisfactory source of supply for figured, ornamental, and wired glass of all standard patterns and thicknesses. We maintain a staff of consultants whose duties consist of rendering every possible assistance to architects and designers.

Free samples of figured and ornamental glass are available upon request.

Figured, ornamental, and wired glasses are functional in character and were developed to meet the following basic needs:

1. To provide effective illumination of glass-enclosed areas.
2. To conform to a desired architectural design or decorative treatment.
3. To provide a translucent but not transparent glazing material to serve in many cases where light is needed but visibility is not desired.
4. The figures, or patterns, in the surface of the glass are highly ornamental in character, but are so devised that they are essentially prismatic—serve to admit, diffuse, and distribute all the light that can possibly be brought in.
5. Wired glass retards the spread of fire from one building to another.
6. Heat-absorbing glasses modify the temperature inside of buildings.
7. To enhance the value of artificial lighting.

Partitions of Structural Corrugated Glass are smart in appearance and practical. (See page 74 for description.)

Products:

STRUCTURAL CORRUGATED GLASS
HEAT-ABSORBING GLASS
SOFTONE FINISH
GLARE-REDUCING FINISH
OPALESCENT GLASS
CATHEDRAL GLASS
LIGHTING GLASS
ARCHITECTURAL GLASS
ROUGH PLATE GLASS
"IMPERIAL" ORNAMENTAL PLATE GLASS
POLISHED FIGURED GLASS
PLAIN FIGURED GLASS
MISCO WIRED GLASS
REGULAR WIRED GLASS

ARCHITECTURAL GLASS

SPECIFICATION — PATTERN NO. 300

Glass Crystal only.

Finish 1. Clear face, matted back, sides cut, ends ground.

2. Clear face, polished back, sides cut, ends ground. (Note: Polishing back reduces thickness of glazing lip to approx. 3/16".)

3. Clear face, mirrored back, sides cut, ends ground. (Note: Silvering on back of finish 3 furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

Weight (Approximate per linear foot)

Std. Panel Width	Containing	Finish 1	Finishes 2 & 3
9¼"	4 flutes	5.5 lbs.	4.4 lbs.
13¼"	6 flutes	7.5 lbs.	5.9 lbs.
25¼"	12 flutes	15.3 lbs.	12.1 lbs.

Clearance Opening to receive glass should be ¼" wider than width sizes above. Tolerance of ⅛" required in cutting individual glazing lips.

Maximum length 48".

SPECIFICATION — PATTERN NO. 301

Glass Crystal only.

Finish 1. Clear face, matted back, sides cut, ends ground.

2. Clear face, polished back, sides cut, ends ground. (Note: Polishing the back reduces thickness of glazing lip to approx. 3/16".)

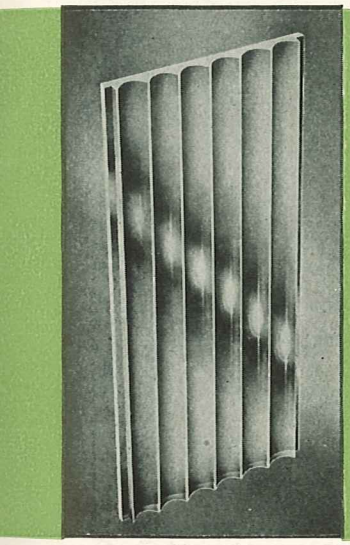
3. Clear face, mirrored back, sides cut, ends ground. (Note: Silvering on the back of finish 3 furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

Weight (Approximate per linear foot)

Std. Panel Width	Containing	Finish 1	Finishes 2 & 3
6¼"	2 flutes	3.7 lbs.	3.0 lbs.
9¼"	3 flutes	5.6 lbs.	4.5 lbs.
12¼"	4 flutes	7.5 lbs.	6.0 lbs.

Clearance Opening to receive glass should be ¼" wider than width sizes above. Tolerance of ⅛" required in cutting individual glazing lips.

Maximum length 48".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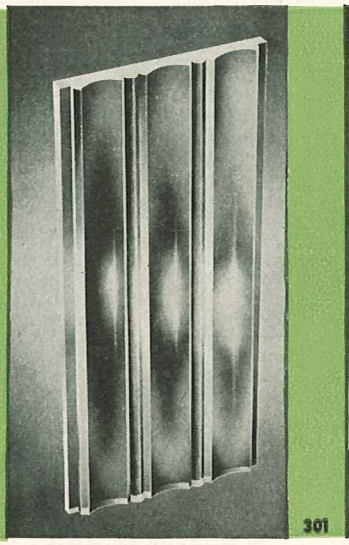
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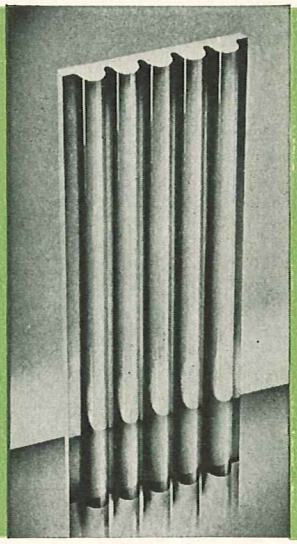
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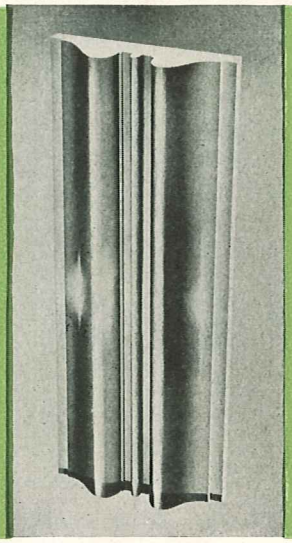

303

SPECIFICATION — PATTERN NO. 302

Glass Crystal only.

Finish 1. Clear face, matted back, sides cut, ends ground.

2. Clear face, polished back, sides cut, ends ground. (Note: Polishing the back reduces thickness of glazing lip to approx. 3/16".)

3. Clear face, mirrored back, sides cut, ends ground. (Note: Silvering on the back of finish 3 furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

Weight (Approximate per linear foot)

Std. Panel Width	Containing	Finish 1	Finishes 2 & 3
2¼"	1 reed	1.7 lbs.	1.4 lbs.
5¼"	3 reeds	4.3 lbs.	3.7 lbs.
8¼"	5 reeds	6.7 lbs.	5.7 lbs.
11¼"	7 reeds	9.1 lbs.	7.7 lbs.

Clearance Opening to receive glass should be ¼" larger than sizes above. Tolerance of ⅛" required in cutting individual glazing lips.

Maximum length 48".

SPECIFICATION — PATTERN NO. 303

Glass Crystal only.

Finish 1. Clear face, matted back, sides cut.

2. Clear face, polished back, sides cut. (Note: Polishing back reduces thickness of the glazing lip to approximately 3/16".)

3. Clear face, mirrored back, sides cut, ends ground. (Note: Silvering on back of finish 3 furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.

Weight (Approximate per linear foot.)

Std. Panel Width	Finish 1	Finishes 2 & 3
5"	3.6 lbs.	3.0 lbs.

Clearance Opening to receive glass should be ¼" larger than size above. Tolerance of ⅛" required in cutting individual glazing lips.

Maximum length 48".

This very unusual section is well adapted to strip illumination, or for feature work on pilasters and facias of commercial buildings.

ARCHITECTURAL GLASS

SPECIFICATION — PATTERN NO. 304

Glass Crystal only.

Finish 1. Clear face, matted back, sides cut, ends ground.

2. Clear face, polished back, sides cut, ends ground. (Note: Polishing back reduces thickness of glazing lip to approx. 3/16".)

3. Clear face, mirrored back, sides cut, ends ground. (Note: Silvering on back of finish 3 furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

Weight (Approximate per linear foot.)

Std. Panel Width	Finish 1	Finishes 2 & 3
8"	4.6 lbs.	3.8 lbs.

Clearance Opening to receive glass should be ¼" wider than size above. Tolerance of ⅛" required in cutting individual glazing lips.

Maximum length 48".

SPECIFICATION — PATTERN NO. 306

Glass Crystal only.

Finish 1. Clear face, matted back, sides ground.

2. Clear face, polished back, sides ground. (Note: Polishing back reduces thickness of glazing lip to approx. 3/16".)

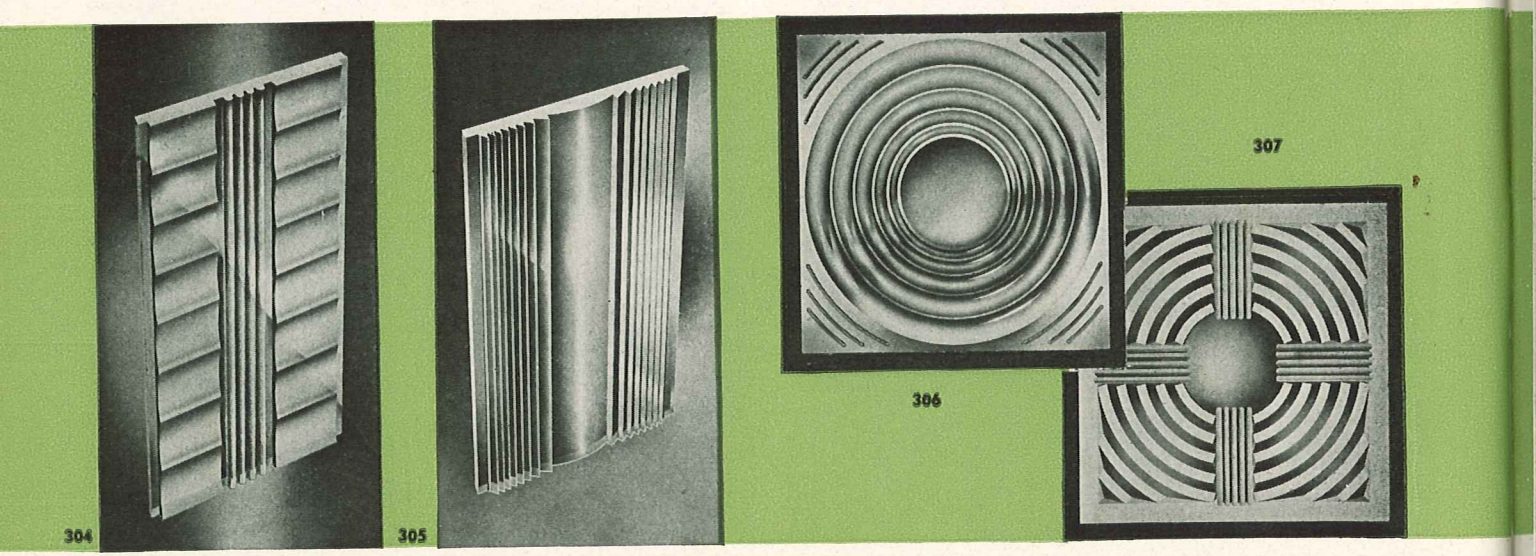
3. Clear face, mirrored back, sides ground. (Note: Silvering on back of finish 3 furnished with a protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

Weight (Approximate) each.

Std. Panel Width	Finish 1	Finishes 2 & 3
18"	19.5 lbs.	16.0 lbs.

Clearance Since all edges of this panel are furnished ground to size, a "joint allowance" of only 1/32" need be made at all edges.

This highly decorative panel can be adapted to a wide variety of uses. It is not limited to use as a square, but it can be cut to a circle or set in a frame that will mask the corner chevrons.



SPECIFICATION — PATTERN NO. 305

Glass Crystal only.

Finish 1. Clear face, matted back, sides cut, ends ground.

2. Clear face, polished back, sides cut, ends ground. (Note: Polishing back reduces thickness of glazing lip to approx. 3/16".)

3. Clear face, mirrored back, sides cut, ends ground. (Note: Silvering on back of finish 3 furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

Weight (Approximate per linear foot.)

Std. Panel Width	Finish 1	Finishes 2 & 3
8¼"	4.6 lbs.	3.6 lbs.

Clearance Opening to receive glass should be ¼" wider than size above. Tolerance of ⅛" required in cutting individual glazing lips.

This unique panel is similar in nature to a fresnel lens in strip form. When used with polished back in conjunction with Neon or gaseous lighting tubes, panel is visible at great distance. With matted back it forms a brilliant strip that is highly decorative.

Maximum length 48".

SPECIFICATION — PATTERN NO. 307

Glass Crystal only.

Finish 1. Clear face, matted back, sides ground

2. Clear face, polished back, sides ground. (Note: Polishing back reduces thickness of glazing lip to approx. 3/16".)

3. Clear face, mirrored back, sides ground. (Note: Silvering on back of finish 3 furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

Weight (Approximate) each.

Std. Panel Width	Finish 1	Finishes 2 & 3
12¾"	7.0 lbs.	⅝" lbs.

Clearance Since all edges of this panel are furnished ground to size, a "joint allowance" of only 1/32" need be made at all edges.

Although this panel has somewhat the appearance of a fresnel type lens, its function is decorative only. The corrugations on the surface do nothing more than diffuse transmitted light. When a number of these panels are used together side by side, or to form a large window, an exceptionally pleasing pattern results.

ARCHITECTURAL GLASS
AND HEAVY ROUGH ROLLED PLATE GLASS

SPECIFICATION — PATTERN NO. 308

Glass Crystal only.

Finish 1. Clear face, matted back, sides cut, ends ground.

2. Clear face, polished back, sides cut, ends ground. (Note: Polishing back reduces thickness of the glazing lip to approx. 3/16".)

3. Clear face, mirrored back, sides cut, ends ground. (Note: Silvering on back of finish 3 will be furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.

Weight (Approximate per linear foot.)

Std. Panel Width	Finish 1	Finishes 2 & 3
4"	6.5 lbs.	5.5 lbs.

Clearance Opening to receive glass should be ¼" wider than size above. Tolerance of ⅛" required in cutting individual glazing lips.

Maximum length 48".

SPECIFICATION — PATTERN NO. 309

Glass Crystal only.

Finish 1. Clear face, matted back, all edges ground.

2. Clear face, polished back, all edges ground. (Note: Polishing back reduces overall thickness to approximately ¾".)

3. Clear face, mirrored back, all edges ground. (Note: Silvering on back of finish 3 will be furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

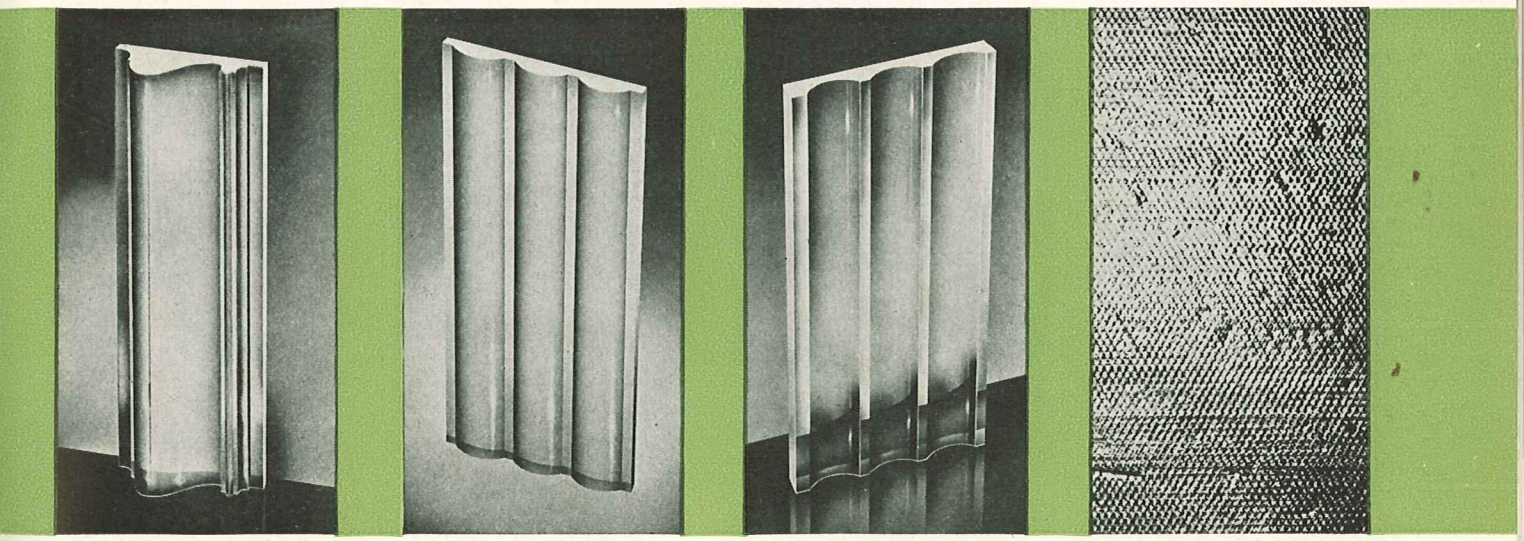
Weight (Approximate per square foot.)

Finish 1 9.4 lbs. Finishes 2 and 3 7.9 lbs.

Maximum width 45½".

Maximum length 48".

Clearance Since all edges of this panel are furnished ground to size, a "joint allowance" of only 1/32" need be made at all edges.



308 309 310 Heavy Rough Rolled Plate Glass

SPECIFICATION — PATTERN NO. 310

Glass Crystal only.

Finish 1. Clear face, matted back, all edges ground.

2. Clear face, polished back, all edges ground. (Note: Polishing back reduces the overall thickness to approximately ¾".)

3. Clear face, mirrored back, all edges ground. (Note: Silvering on back of finish 3 furnished with protective film of electrolytically-deposited copper. However, care should be taken to protect mirror backing in the installation proper.)

Weight (Approximate per square foot.)

Finish 1 7.5 lbs. Finishes 2 and 3 6.0 lbs.

Maximum width 46".

Maximum length 48".

Clearance Since all edges of this panel are furnished ground to size, a "joint allowance" of only 1/32" need be made at all edges.

HEAVY ROUGH ROLLED PLATE GLASS

Heavy rough rolled plate glass is a clear glass with a knurled surface pattern. It is rough stock for grinding and polishing into plate glass. Excellent for roofs, skylights, floors, or other purposes where extra strength is required, but transparency and flat parallel polished surfaces are not needed.

THICKNESSES 21/64", ½", ⅝", ¾", ⅞", 1", 1⅛", 1⅜".

MAX. SIZES

21/64"	150" x 260"
½" and ⅝"	72" x 160"
¾" to 1⅜"	70" x 130"

WEIGHTS (Uncrated) per square foot.

21/64"	5.38 lbs.	⅞"	11.52 lbs.
½"	6.58 lbs.	1"	13.16 lbs.
⅝"	8.22 lbs.	1⅛"	14.91 lbs.
¾"	9.67 lbs.	1⅜"	18.09 lbs.

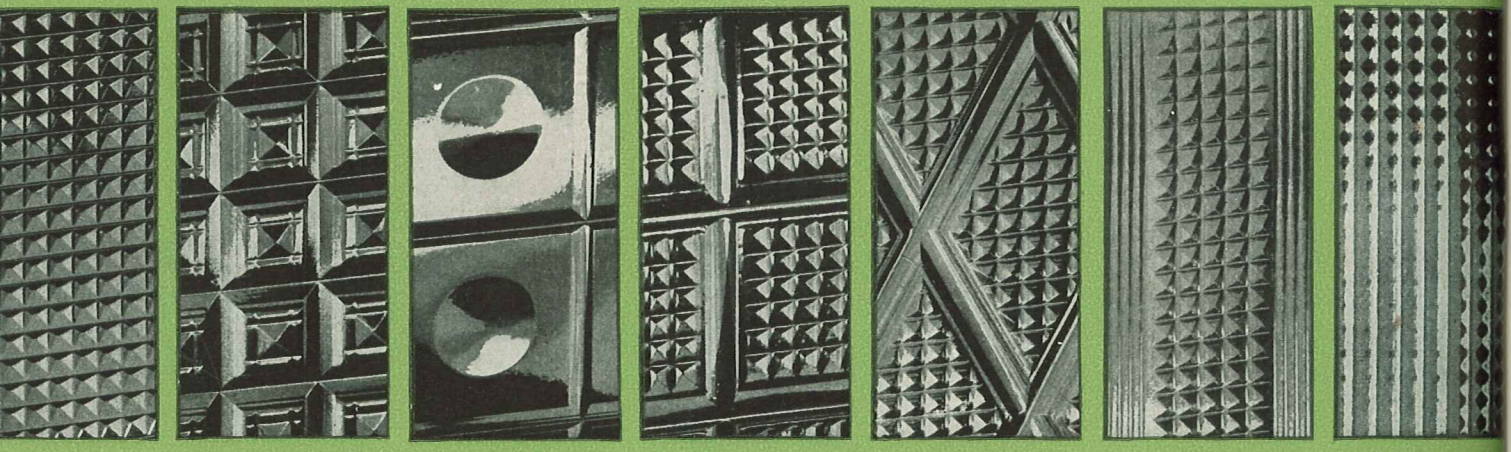
COLOR Translucent, semi-opaque.

"IMPERIAL" PRISM-PLATE ORNAMENTAL GLASS

This is a form of polished plate glass one side of which is ground and polished, the other side having die-pressed prismatic patterns. The process of pressing the design insures a glass that is superior in evenness, clearness, and sharpness of cut. Each little prism in the design reflects a brilliance and has a luster which aids in securement of maximum lighting results.

THICKNESSES	¼" to 5/16".
MAX. SIZE	72" x 84".
WEIGHT	(Uncrated) 4.37 lbs. per square foot.
COLOR	Translucent, semi-opaque.

"IMPERIAL" Prism-Plate Ornamental Glass is available in the following distinctive patterns:



0-1 0-2 0-3 0-4 0-5 0-6 0-7

STYLE 0-1

A semi-obscure glass pyramidal pattern containing 64 indented pyramids to the square inch; it affords maximum efficiency of daylight refraction.

STYLE 0-2

A semi-obscure glass of arabesque pattern for doors, partitions, ceiling lights, and bank windows. Designed to provide full daylight illumination and retain attractive appearances under harsh usage.

STYLE 0-3

A semi-transparent glass of geometrical pattern for fixtures, doors, and partitions where decorative effect of partial transparency is desired.

STYLE 0-4

A semi-obscure glass of indented pyramidal pattern set in square-shaped design which affords maximum daylight diffusion and refraction. Particularly adapted for use in large lights or in mass installation in corridor, ceiling, or partition.

STYLE 0-5

A semi-obscure glass of indented pyramidal pattern set in diamond-shaped design which affords maximum daylight diffusion and refraction. Particularly adapted for use in Gothic or modern style architecture.

STYLE 0-6

Rubanite—a semi-obscure glass of indented pyramidal design with alternating indented ribbed design of equal width. Particularly adapted for use in transoms, doors, and partitions of buildings of modernistic design.

STYLE 0-7

Texture—a semi-obscure glass of interwoven prism design, obtained by pressing vertical ribbed lines over horizontal lines in varying widths, to provide maximum light diffusion and refraction. Particularly adapted for use in transoms, doors, and partitions of buildings of modernistic design.

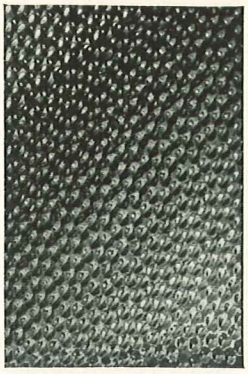
POLISHED FIGURED GLASS

The following patterns are translucent, semi-opaque glasses with one face containing the design pressed into the surface of the glass, as described for each pattern, and the other face of the glass ground and polished with same care as the finest polished plate glass.

THICKNESS All patterns available in 7/32" only.
MAX. SIZE 60" x 136".
WEIGHT (Uncrated) 2.8 lbs. per square foot.
(Packed for shipment) 3.5 lbs. per square foot.

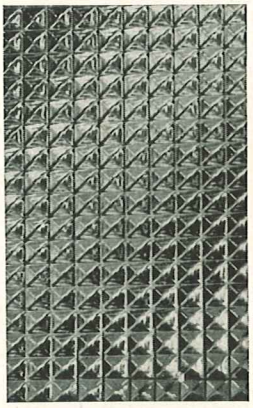
DEWLITE

Designed for maximum light diffusion. Small slightly elevated lenses grouped in attractive manner and spaced to avoid dirt-collecting pockets. It is very easily cleaned and gives a uniform distribution of daylight or artificial illumination in a circular-shaped pattern. Approximate light transmission 88.5%.



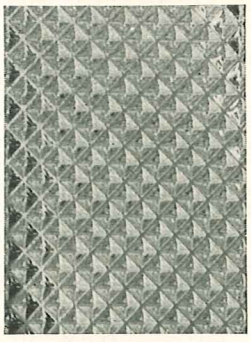
ARTEX

An irregular pebbled design of medium depth and obscurity with a soft sheen. It diffuses the light in a circular-shaped pattern uniformly in all directions, and is easily cleaned because of the very shallow indentations of the pattern. Approximate light transmission 88.5%.



PRESTLITE

A square design of pyramidal projections (64 to the square inch) with straight lines; easily cleaned and possesses a silvery sheen. A very obscure glass which diffuses light within a cross-shaped design. Approximate light transmission 52.3%



AURORA

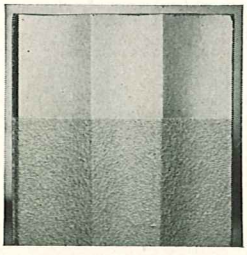
A diamond design of pyramidal projections with straight lines which make it easily cleaned. An unusually efficient obscure pattern with high transmission of light and diffusion of light in square-shaped design. Approximate light transmission 76%.

SYENITE

The irregular pebbled design is very attractive, deeply impressed in the surface, highly obscure and unusually brilliant in appearance. Has high light transmission and diffuses light in a circular-shaped pattern. Approximate light transmission 80%.

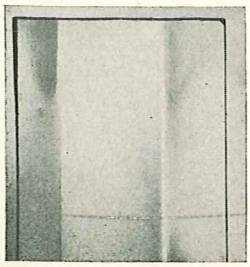
BANDLITE

This pattern is similar to Bevelite but gives the effect of narrower and sharper lines. A new pattern to meet the demand for a decorative glass with modern design. Approximate light transmission 89%. Illustration shows lower half with softone finish.



TAPESTRY

Ideal for use where it is desirable to admit the light but also to obstruct the view. Objects placed quite close to the surface of the glass can be seen almost as clearly as through transparent glass. Objects decrease in visibility and eventually become entirely shadowed and obscured when removed from close proximity to the glass. Available in Tapestry Finish on both surfaces, and one surface Tapestry Finished, one surface polished.

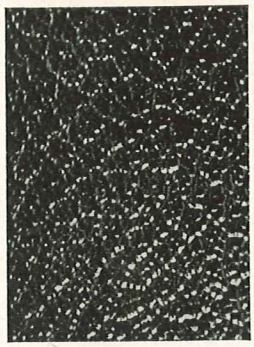


BEVELITE

A straight-line pattern used with the pattern running either vertically or horizontally. Especially designed to meet the demand for a decorative glass with a distinct modern appearance; a new pattern which has received excellent acceptance. Available in softone finish to provide great obscurity. Approximate light transmission 90%.

PLAIN FIGURED GLASS

The following patterns are translucent, semi-opaque glass. All of the patterns, with the exception of Artex, Magnalite, and Tapestry (which have design pressed on both surfaces) are made with one face containing the design pressed into the surface and with the other face smooth fire-polished (the same surface as that of window glass).



ARTEX

An irregular pebbled design on one face and the Luxlite design on the other. The Luxlite design is a very simple indefinite one, which is almost smooth, yet rough enough to obscure the vision. The pattern is very desirable for obscurity and richness in appearance. It distributes light in a circular-shaped pattern.

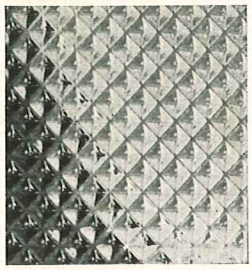
Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"

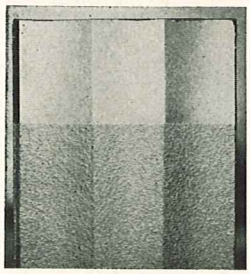
Approximate light transmission 88.5%.

AURORA

A diamond design of pyramidal projections with straight lines which make it easily cleaned. An unusually efficient obscure pattern with good transmission and distribution of light in square-shaped design. Approximate light transmission 76%.

Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"





BANDLITE

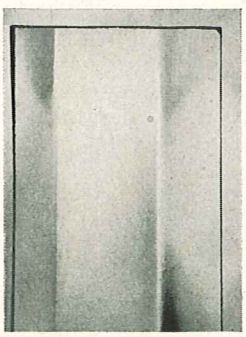
This pattern is similar to Bevelite but gives the effect of narrower and sharper lines. Available in softone finish to provide great obscurity. Approximate light transmission 89%. Illustration shows lower half with softone finish.

Maximum sizes: 1/8"-----54" x 136"
7/32"---54" x 136"

BEVELITE

A straight-line pattern used with the pattern running either vertically or horizontally. Especially designed to meet the demand for a decorative glass with a distinct modern appearance; a new pattern which has received excellent acceptance. Available in softone finish to provide great obscurity. Approximate light transmission 90%.

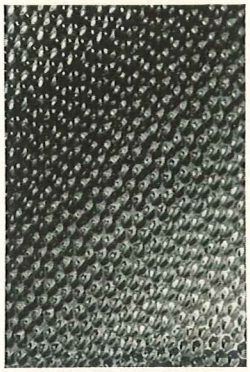
Maximum sizes: 1/8"-----54" x 136"
7/32"---54" x 136"



DEWLITE

Designed for maximum light diffusion. Small slightly elevated lenses grouped in attractive manner and spaced to avoid dirt-collecting pockets. It is very easily cleaned and gives a uniform distribution of daylight or artificial illumination in a circular-shaped pattern. Approximate light transmission 88.5%.

Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"

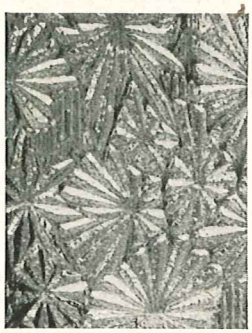


FACTROLITE

Tiny lens-shaped design especially designed for use in vertical (side wall) openings of industrial buildings to break up direct rays of the sun and diffuse them in all directions. This cuts down the sun's intensity at the windows and builds up the illumination 25 feet from the window about 72% greater than does clear window glass.

Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"

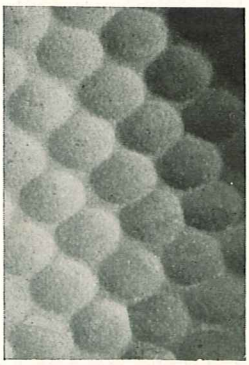
Approximate light transmission 87.5%.



FLORENTINE

One of America's first and most extensively used figured rolled sheet glass patterns. Purely an ornamental design for partitions or screens where obscurity is desired. Approximate light transmission 88.5%.

Maximum size: 1/8"-----48" x 132"



HAMMERED

The design is formed by a series of raised adjacent lens which provide the appearance of a hammered surface. Especially designed for industrial buildings, which are exposed to excessive dirt accumulation as it is classed as among the easier glasses to clean. It is obscure and provides good light transmission and distributes light in a circular-shaped pattern. Approximate light transmission 87.5%.

Maximum sizes: 1/8"----------48" x 132"
7/32"----------60" x 136"
3/8"----------60" x 144"
1/2"----------60" x 132"

PLAIN FIGURED GLASS

HYLITE

A comparatively clear, irregular pattern designed to transmit a maximum of light. Particularly suited to north elevations to utilize the thoroughly diffused north light without impairing its quality or quantity. A popular glass for industrial building, as it has a high light transmission and is easily cleaned. Approximate light transmission 90.5%.

Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"

LUXLITE

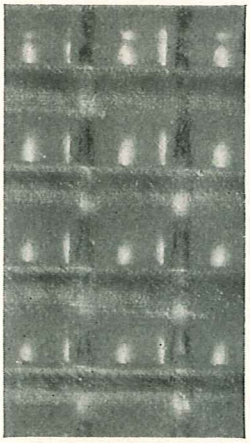
A very simple indefinite design. Almost smooth, yet rough enough to obscure the vision. An excellent foundation for decorative etchings of glass panels used in artistic lighting screens, fluorescent luminaires, and shower doors. Also very popular for low-priced office partitions. Approximate light transmission 88.5%.

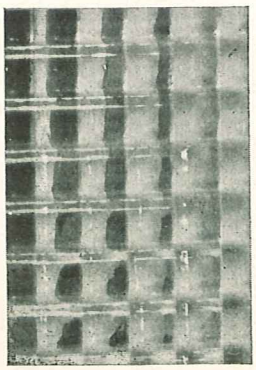
Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"

MAGNALITE "A"

This is an unusual design of figured rolled sheet glass in that it has especially designed cylindrical lenses on each surface, running at right angles to each other, to produce a particular type of light distribution which is most desirable for ceiling light or panel illumination. Approximate light transmission 87.5%.

Maximum size: 7/32"---60" x 144"





MAGNALITE "B"

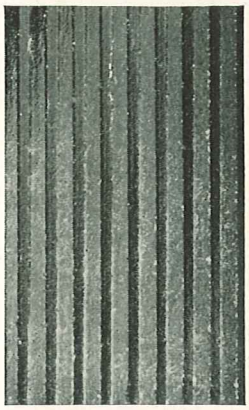
The design of this glass is very similar to Magnalite "A," except in size of cylindrical lenses which are smaller and which afford a more uniform distribution of light. These two types of glass accomplish substantially the same results. They are so obscure that objects behind the glass are well concealed. Approximate light transmission 84.5%.

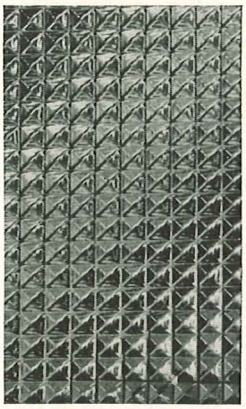
Maximum size: 7/32"---60" x 144"

PENTICOR

The design consists of approximately eight parallel ribs which drain off condensation of moisture on the interior surface and diffuse light perpendicular to ribs, forming a light transmission pattern rectangular in shape. When installed, the ribs should be vertical. A popular glass shield for fluorescent lighting with or without glare-reducing finish. Approximate light transmission 88.5%.

Maximum size: 1/8"-----48" x 132"





PRESTLITE

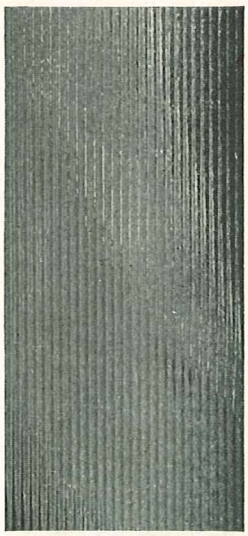
A square design of pyramidal projections (64 to the square inch) with straight lines, possessing a silvery sheen. A very obscure glass which diffuses light remarkably within a cross-shaped design. Approximate light transmission 52.3%.

Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"

RIBBED

The design consists of approximately twenty-two fine parallel ribs per inch, which spread light perpendicular to ribs, forming a light transmission pattern rectangular in shape. When installed, the ribs should be vertical. This is one of the oldest and most widely used patterns, when obscurity, durability, and economy are involved. Approximate light transmission, 88.5%.

Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"
3/8"-----60" x 144"
1/2"-----60" x 132"

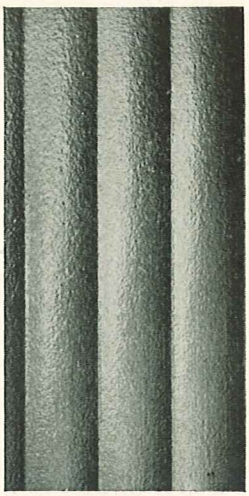


SYENITE

The irregular pebbled design is very attractive, deeply impressed in the surface, highly obscure and unusually brilliant in appearance. Has high transmission and diffuses light in a circular-shaped pattern. Approximate light transmission 80%.

Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"

PLAIN FIGURED GLASS



PLURALITE

A straight line fluted pattern that can be glazed either vertically or horizontally — a new pattern especially designed to meet the demand for a decorative glass with a distinct modern appearance. Especially suited for fluorescent light fixtures, shower doors, partitions, etc. When ordering, specify the first dimension, across the flutes and the second along the flutes. Available in glare-reducing finish—to provide greater obscurity.

Supplied in regular finish:
Maximum sizes: 1/8"-----48" x 132"
7/32"---60" x 136"

Supplied in glare-reducing finish:
Maximum sizes: 1/8"-----30" x 132"
7/32"---30" x 136"

TAPESTRY

Ideal for use where it is desirable to admit the light but also to obstruct the view. Objects placed quite close to the surface of the glass can be seen almost as clearly as through transparent glass. Objects decrease in visibility and eventually become entirely shadowed and obscured when removed from close proximity to the glass. Available in Tapestry Finish on both surfaces, and one surface Tapestry Finished, one surface polished.

Maximum size: 7/32"---60" x 136"

MISCO WIRED GLASS

"Misco" is a special development of intersecting diagonally shaped wire mesh welded at each intersection. In "Misco" we offer a really good-looking wire glass and have gotten away from the conventional twisted hexagonally shaped poultry wire. It is as efficient a fire retardant as the standard mesh type and is fully approved by the National Board of Fire Underwriters.

Underwriters' Requirements

The rules of the National Board of Fire Underwriters limit the size of wire glass which can be glazed in openings exposed to fire hazard. In no case shall the unsupported area of the glass measure more than 48 inches in either dimension or exceed 720 square inches (five square feet). Typical maximum sizes which satisfactorily meet that requirement are 15" x 48", 18" x 40", 20" x 36", and 24" x 30". It is also necessary that wire glass used for this purpose be set in frames made of non-inflammable materials, and that the glass be retained by the structural part of the frame independently of the glazing material which may be used for weatherproof purposes.

CLEAR POLISHED

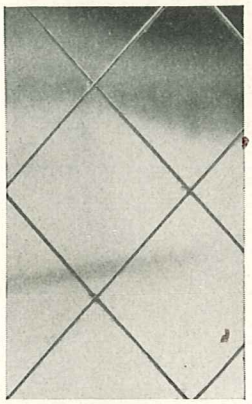
Mechanically ground and polished on both surfaces.

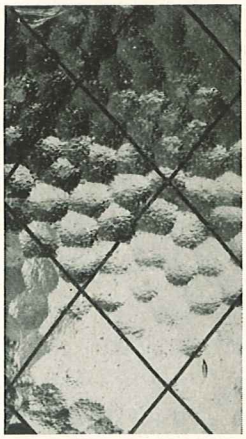
Maximum size: 1/4"-----58" x 132"

COOLITE
CLEAR POLISHED

This glass is made from special ingredients and by carefully worked-out processes that give it the highly important and valuable properties of absorbing solar heat and softening the light. Its color is a cool blue, with a greenish cast. Both surfaces mechanically ground and polished in exactly the same manner as polished plate glass.

Maximum size: 1/4"-----58" x 132"





HAMMERED

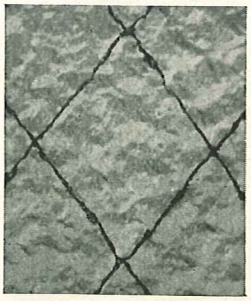
The design is formed by a series of raised adjacent lens which provide the appearance of a hammered surface. Especially designed for industrial buildings, which are exposed to excessive dirt accumulation as it is classed as among the easier glasses to clean. It is obscure and provides good light transmission and distributes light in a circular-shaped pattern. Approximate light transmission: 84%.

Maximum size: 1/4"-----56" x 144"

SYENITE

The irregular pebbled design is very attractive, deeply impressed in the surface, highly obscure and unusually brilliant in appearance. Has high transmission and diffuses light in a circular-shaped pattern. Approximate light transmission 74%.

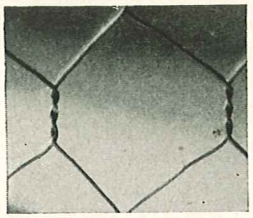
Maximum size: 1/4"-----56" x 144"



REGULAR WIRED GLASS

Standard twisted hexagonal wired glass, used as a fire-retardant and so approved by the Underwriters' Laboratories and regularly inspected for fire-retardant qualities by them. Our product is characterized by its exceedingly flat back and comparative freedom from "bumpiness" usually called "Caramel."

Regular wired glass is available in the following glasses:

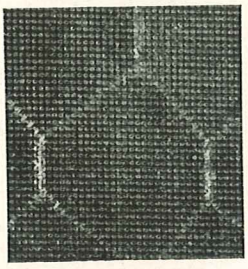


CLEAR POLISHED

Mechanically ground and polished on both surfaces.

Maximum sizes: 1/4"----60" x 132"
3/8"----60" x 132"
1/2"----44" x 120"
5/8"----42" x 108"
3/4"----42" x 96"

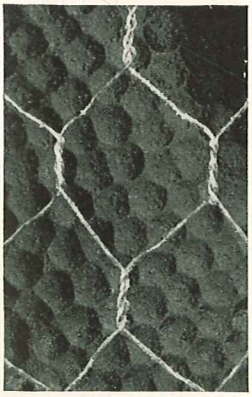
FACTROLITE



Tiny lens-shaped design especially designed for use in vertical (side wall) openings of industrial buildings to break up direct rays of the sun and diffuse them in all directions. This cuts down the sun's intensity at the windows and builds up the illumination 25 feet from the window about 72% greater than does clear window glass. Approximate light transmission 82%.

Maximum size: 1/4"------60" x 144"

HAMMERED



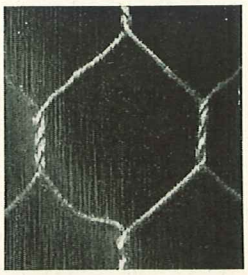
The design is formed by a series of raised adjacent lens which provide the appearance of a hammered surface. Especially designed for industrial buildings which are exposed to excessive dirt accumulation, as it is classed as among the easier glasses to clean. It is obscure and provides good light transmission and distributes light in a circular-shaped pattern. Approximate light transmission 84%.

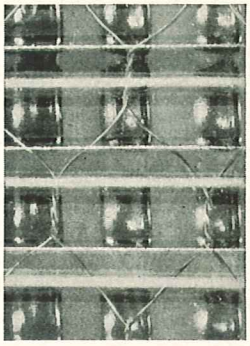
Maximum sizes: 1/4"----60" x 144"
3/8"----60" x 132"
1/2"----60" x 132"
5/8"----46" x 132"
3/4"----44" x 132"
7/8"----44" x 120"

HYLITE

A comparatively clear, irregular pattern designed to transmit a maximum of light. Particularly suited to north elevations to utilize the thoroughly diffused north light without impairing its quality or quantity. A popular glass for industrial building, as it has a high light transmission and is easily cleaned. Approximate light transmission 83%.

Maximum size: 1/4"------60" x 144"





MAGNALITE "A"

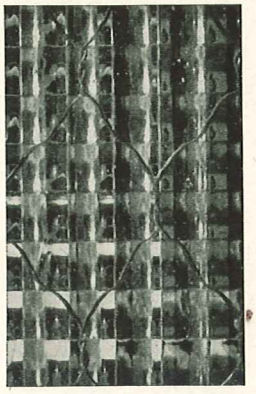
This is an unusual design of figured rolled sheet glass in that it has especially designed cylindrical lenses on each surface, running at right angles to each other to produce a particular type of light distribution which is most desirable for ceiling light or panel illumination. Approximate light transmission 82%.

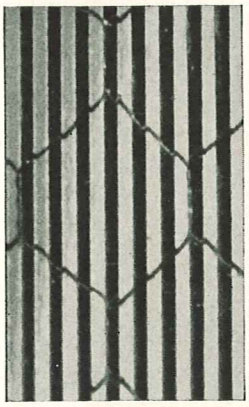
Maximum size: 1/4"------60" x 144"

MAGNALITE "B"

The design of this glass is very similar to Magnalite "A" except in size of cylindrical lenses which are smaller and which afford a more uniform distribution of light. These two types of glass accomplish substantially the same results. They are so obscure that objects behind the glass are well concealed. Approximate light transmission 83.5%.

Maximum size: 1/4"------60" x 144"





PENTICOR

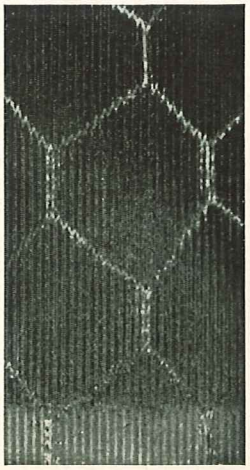
The design consists of approximately eight parallel ribs which drain off condensation of moisture on the interior surface and diffuse light perpendicular to ribs, forming a light-transmission pattern rectangular in shape. When installed, the ribs should be vertical. The outstanding pattern for use in skylights to increase daylight illumination for large floor areas. Approximate light transmission 73%.

Maximum size: 1/4"------60" x 144"

RIBBED

The design consists of approximately twenty-two fine parallel ribs per inch which spread light perpendicular to ribs, forming a light-transmission pattern rectangular in shape. When installed, the ribs should be vertical. This is one of the oldest and most widely used patterns when obscurity, durability, and economy are involved. Approximate light transmission 85%.

Maximum sizes: 1/4"----60" x 144"
3/4"----44" x 132"
7/8"----44" x 120"
3/8"----60" x 132"
1/2"----60" x 132"
5/8"----46" x 132"



STRUCTURAL CORRUGATED GLASS

This glass is made in flint (white) and in Coolite (greenish blue). It is not supplied in wire glass. It is a thick, sturdy product designed for great strength and compelling appearance.

Structural corrugated glass is stocked at the factory in only two standard widths, 27½″ and 55″. It can be cut, however, from those standard widths to any widths that are multiples of 2½″, with both sides out at the top of the corrugations. It can also be furnished with one side cut at the top of a corrugation and the other side cut at the bottom of a corrugation, so that standard widths can be cut to widths that are multiples of 1¼″. In length this glass can be cut to any dimension up to 144″ long.

This product is very difficult to cut on the job and should be ordered in the *exact sizes* required.

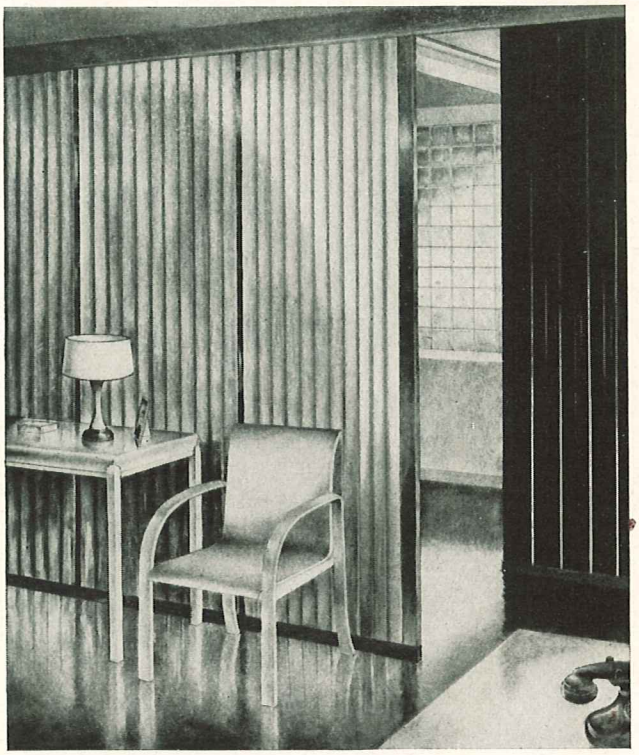
Both flint and Coolite Structural Corrugated Glass are furnished, where desired, in glare-reducing finish, which is a velvet-smooth, etched finish applied to both surfaces of the glass. Glass with this glare-reducing finish cannot be supplied wider than 30″ or longer than 132″.

Weight

Maximum size: 7/16″.....
.....55″ x 144″
Approximately 6.3 lbs. per square foot.

Weight Packed for Shipment

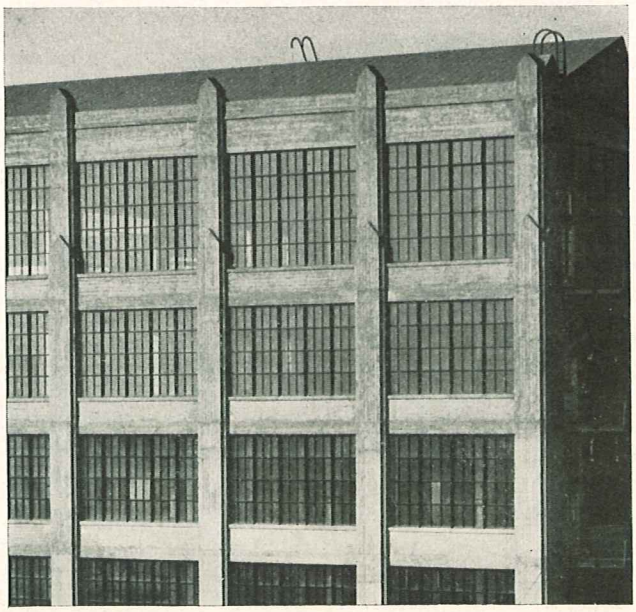
Approximate 8.2 lbs. per square foot (in full cases of approximately 185 square feet).



An attractive, pleasing partition.

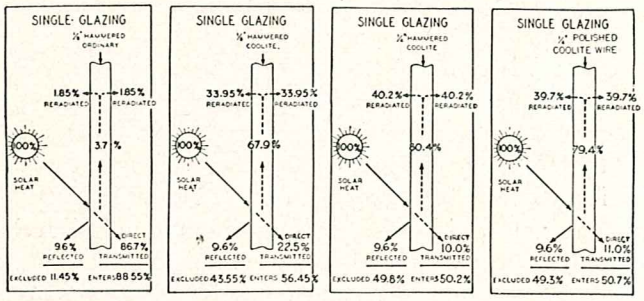
HEAT-ABSORBING FIGURED AND WIRED GLASS

Heat-absorbing glass provides protection against heat radiation by the sun, and its use results in a positive reduction in shop or room heat and the maintenance of much more comfortable temperatures in the areas near sun-exposed windows. The use of heat-absorbing glass reduces the amount of solar heat entering the building (through skylights, windows, and transoms) by as much as 48% and at the same time provides excellent light transmission the year around. In addition to reducing glare and providing cooler summer temperatures indoors, it eliminates painting or whitewashing of glass, reduces spoilage, increases worker safety, decreases errors, speeds production, and substantially improves worker efficiency. It is vital in air-conditioned buildings. Its use in skylights and western windows will materially reduce the "design" cooling load and will thus enable cooling with smaller capacity cooling equipment than needed when ordinary glass is used.



COOLITE HEAT-ABSORBING GLASS

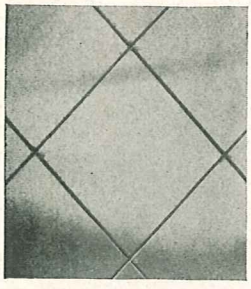
Type "H," heat-intercepting or resisting glass, U. S. Government specification DD-G-451, is a greenish blue glass and is available in ¼" Misco Polished, ⅛" and ¼" hammered and ribbed without wire, and ¼" hammered and ribbed wired glass.



HAMMERED COOLITE

This design is formed by a series of raised adjacent lens which provide the appearance of hammered surface. Especially designed for industrial buildings exposed to excessive dirt accumulation as it is one of the easiest glasses to clean. It is obscure, provides good light transmission, distributes light in circular pattern.

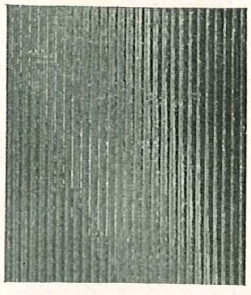
Maximum sizes: ⅛"------60" x 132"
¼"------60" x 144"



MISCO POLISHED COOLITE

Made from special ingredients and by carefully worked-out processes that give it the highly important and valuable properties of absorbing solar heat and softening the light. Its color is a cool blue with a greenish cast. A clear glass with both surfaces mechanically ground and polished in same manner as polished plate glass.

Maximum size: ¼"------ 58" x 132"



RIBBED COOLITE

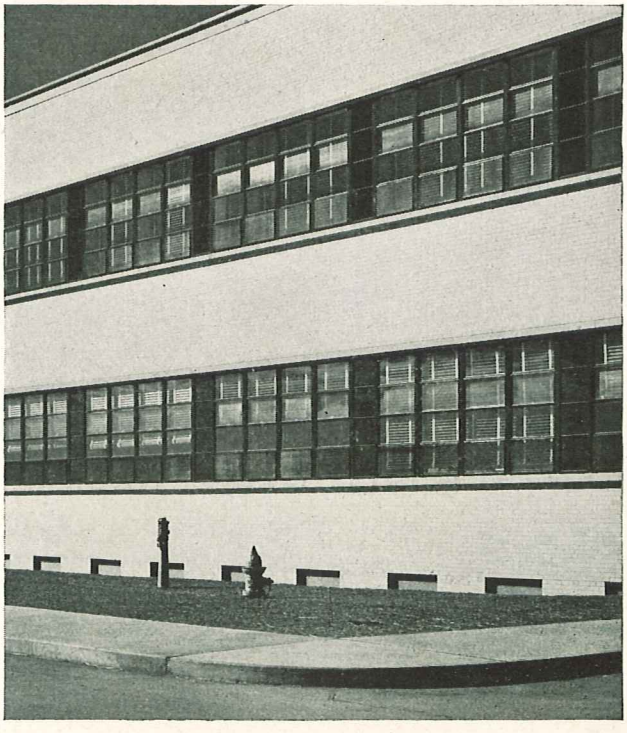
Design consists of approximately twenty-two parallel ribs per inch which spread light perpendicular in shape. When installed, ribs should be vertical. This is one of the oldest and most widely used patterns when obscurity, durability, and economy are necessary.

Maximum sizes: ⅛"------60" x 132"
¼"------60" x 144"

ACTINIC HEAT-ABSORBING GLASS

Type "H" heat-intercepting or resisting glass, U. S. Government specification DD-451; an amber glass which is available in ⅛" and ¼" Rough (Hammered) and Ribbed, without wire, and ¼" Rough (Hammered) and Ribbed Wired Glass. It is widely used in windows and skylights to moderate the heat and glare of sunlight in buildings not equipped with shades.

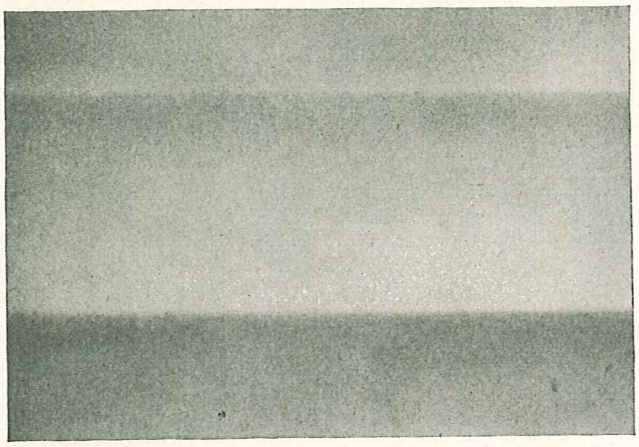
A noteworthy feature of numerous factories built in recent years is the superior distribution of moderated natural light which architects have accomplished by skillful design and the use of large and continuous areas of Actinic Glass.



SOLEX HEAT-ABSORBING PLATE GLASS

Provides protection against heat radiation of the sun, absorbs the infra-red heat rays of the sun and thus excludes 30% of radiant heat as contrasted to 10% by ordinary glass. Reduces eyestrain and glare but transmits from 70% to 75% of the total light. Prevents fading and bleaching of delicate fabrics. For details see Page 15, "Plate Glass Section."

SOFTONE FINISH ON FIGURED GLASS



Softone finish is a process, or surface treatment, that may be applied to one or both surfaces of the glass. It gives the glass a mellow, satinlike finish. It transforms a semi-transparent, non-diffusing glass into a glass that is quite obscure with excellent light diffusion, thus giving a high general level of illumination—a light that is soft and restful and, at the same time, affording complete privacy.

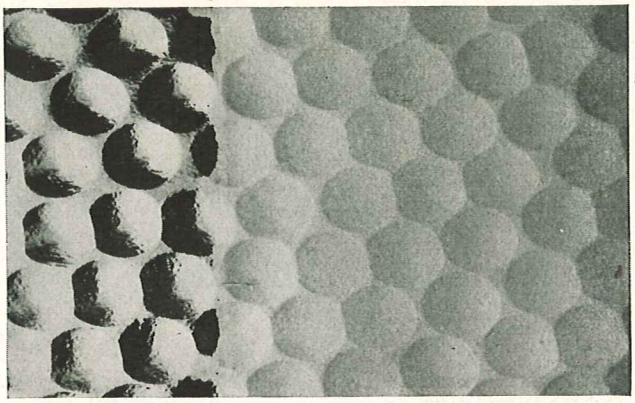
Softone finish is more expensive than sandblasting or acid etching. Applied on one surface, it reduces light transfusion approximately 3%. Applied on both sides, it reduces light transmission about 16%.

Softone finish is supplied on Bandlite and Bevelite only. Illustration shows softone finish.

GLARE-REDUCING FINISH ON FIGURED GLASS

While figured glass definitely reduces glare, it is strongly recommended that glare-reducing (frosted) finish be used where glare is an important consideration. The purpose of glare-reducing (frosted) finish is to give uniformity of light by diffusing it widely and at the same time subduing the surface brightness of the glass itself. Just as frosting of light bulbs was an important advance in the field of artificial lighting, so is the glare-reducing (frosted) finish a great improvement in the daylighting of factories, office buildings, and stores.

Direct glare is the presence, within the field of vision, of any brightness of such a character as to cause eye-fatigue, discomfort, or interference with vision. Glare-Reducing (frosted) finish overcomes both direct and reflected glare.



Regular Glare-Reducing Finish

Glare-Reducing (frosted) finish is supplied in plain and wired glasses in any pattern or thickness (except cathedrals).

Maximum width—30″ Maximum length—136″

OPALESCENT GLASS

Opalescent glass is produced in standard solid and variegated combinations of colors. Several shades are available in each color.

This glass is approximately ⅛″ thick and is supplied in sizes up to 30 inches wide and 84 inches long. It is supplied with smooth surface finish or granite surface.

Opalescent glass is generally supplied in geometric designs, joined with lead or zinc cames, to form ornamental windows in churches, homes, and public buildings.

Pleasing effects in light fixtures, and other uses are possible due to the wide variety of dense colors and varying degrees of opacity available.

We suggest selection of opalescent glass from actual samples in order to secure the colors and other ornamental effects desired. Free samples and color suggestions provided upon request.

No two sheets of opalescent glass are exactly identical. Thus when placing orders for glass to replace breakage, always submit a piece of the broken glass in order that we may be able to match it as closely as possible in color and surface pattern.

CATHEDRAL GLASS

Cathedral glass is produced in crystal, white, opal, amber, blue, green, wine, and variegated colors. Several shades are available in each color.

This glass is ⅛″ thick and is supplied in sizes up to 30″ wide by 90″ long with smooth surfaces or with one surface smooth fire-polished and the other face of the sheet with ornamental hammered effect, or a "rippled" effect produced by rolling a pattern into one surface while the glass is still plastic.

As its name implies, cathedral glass was originally designed for church windows. It is usually made up in geometric designs which are joined together with lead or zinc cames.

There is such a wide variety of colors and tints of cathedral glass that we recommend that all selections be made from actual samples of the glass.

When placing orders for glass to replace breakage, always submit a piece of the broken glass in order that we may be able to match it in color and in surface pattern.

LIGHTING GLASSES

Pittsburgh Lighting Glasses have been especially developed to meet the demand for cover or shield for fluorescent tubes. In spite of the lower brightness of the new tubes as compared with incandescent lamps, it is widely conceded that the tubes must be shielded in some way and that an obscured flat or curved glass plate will function satisfactorily for this purpose.

ROUGH WATER WHITE

A clear non-greenish glass with a surface pattern of very fine diamond texture. Total light transmitting efficiency 90%.

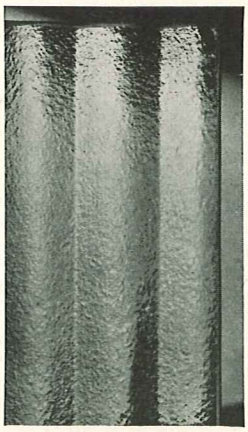
If sandblasted on one face, the efficiency is 85%.

Maximum size: 10/64″, 12/64″, 21/64″----------36″ x 72″

REEDED WATER WHITE

A clear non-greenish glass with surface pattern of flutes ⅝″ wide in one direction. Both surfaces of the glass are slightly roughened to increase light dispersing effect and to eliminate specular reflection. Total light-transmitting efficiency 94%. If sandblasted on one face, efficiency is 87%.

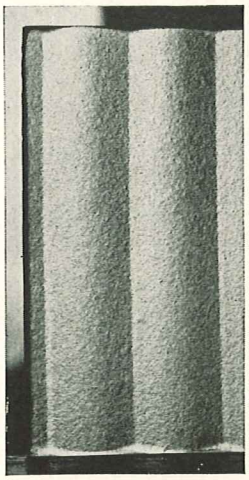
Maximum size: 10/64″----36″ x 72″



ROUGH OPAL

A light density, high efficiency, solid opal diffusing glass (plain), without pattern.

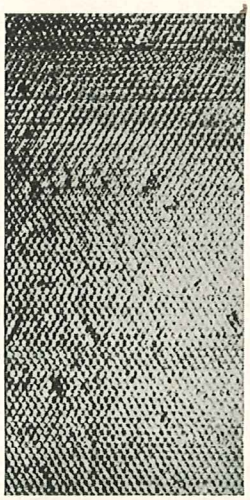
Maximum size: 9/64″----36″ x 72″



REEDED OPAL

A light density, high efficiency, solid opal diffusing glass. Same pattern and surface as reeded water white. More diffusing power than sandblasted reeded water white and more easily cleaned. Total light-transmitting efficiency 83%.

Maximum size: 10/64″----36″ x 72″



ROUGH FLESH-TINTED

A pinkish glass with a surface pattern of very fine diamond texture. Designed to change the greenish white light of the "white" fluorescent lamp to a more pleasing, warm light particularly for beauty shops, restaurants, and meat shops.

Maximum size: 9/64″, 19/64″----36″ x 72″

ENAMELED GLASSES

Any of the above glasses supplied with a fused-on layer of ceramic enamel of almost any density, white or tinted. Provides a cleanable, diffusing surface.

MISCELLANEOUS WORK ON GLASS

fabricating and processing flat glass

BENDING

All kinds of flat glass can be bent.

A flat sheet of glass is placed over a mold of the desired shape.

As it is heated, it softens and sinks, and takes the shape of the mold.

EXPLANATION OF CURVES AND DIAGRAMS

A—Curves are those which are bent to a given radius one way of the pane only, which applies to the whole length or width of the pane, and not to one part only, the depth of bend not to exceed one-eighth of the length of the bent side of pane. Example, length of the bent side of pane, 96 inches, depth of bend not above 12 inches.

B—Curves are those which are bent more than one-eighth, but not to exceed the quarter of a circle, or about 1 in 5½. Example, pane 77 inches, bend 14 inches.

C—For the same curve as B, but a part flat, the flat part not to exceed one-third. Example, pane 72 inches, bend 48 inches, flat 24 inches.

D—For flat curves, with one part flat, the depth of the bent part not to exceed 1 in 12, and the flat part one-half. Example, pane 72 inches, bend 36 inches, depth 3 inches, flat 36 inches.

E—For curves, the bent part not less than a 6-inch radius, and not to exceed the quarter of a circle, with flat part, the flat part to exceed one-third, but not to exceed two-thirds. Example, pane 72 inches, bend 24 inches, flat 48 inches.

F—Curves are those which are bent beyond the quarter of a circle, but not to exceed 1 in 4. Example, pane 84 inches, depth 21 inches.

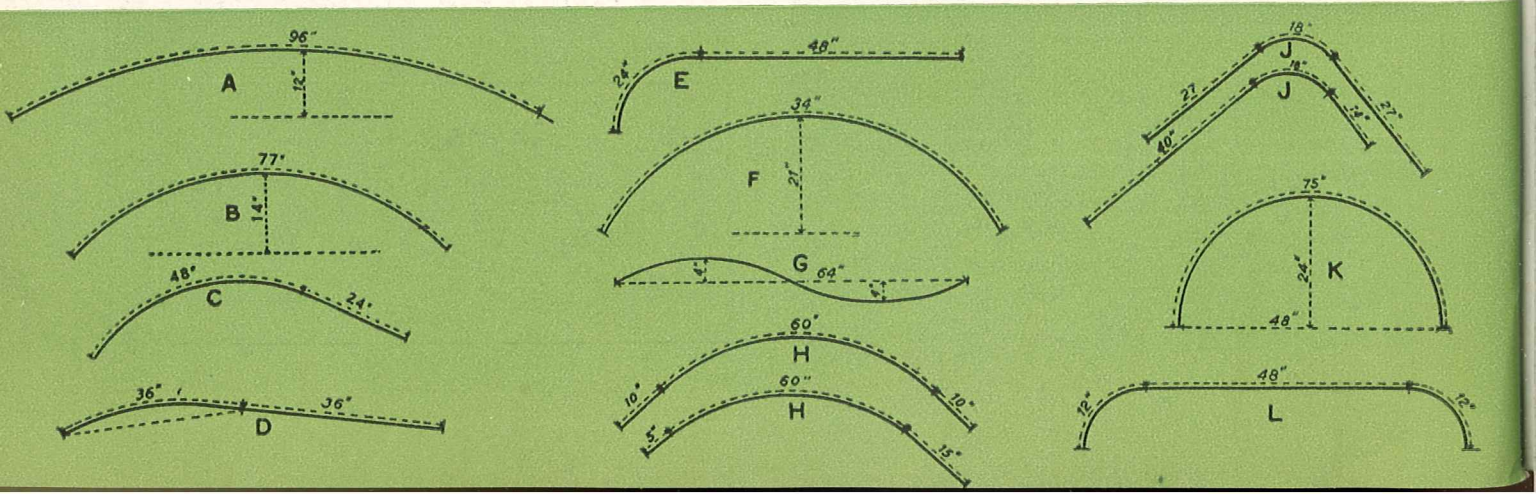
G—For OG curves, depth not to exceed 1 in 16. Example, pane 64 inches, depth 4 inches.

H—For angular curves, viz.: Flat parts on each side, the centers not to exceed the quarter of a circle, the end flat parts one-fourth of the sides bent. Example, pane 80 inches, bend 60 inches, flat 10 inches, each side, or about 5 inches on one side and 15 inches on the other.

J—For angle curves (radius not less than 6 inches), the center not to exceed the quarter-circle, and the flat to exceed one-fourth, but not to exceed three-fourths. Example, pane 72 inches, bend 18 inches, flat 27 inches, each side, or about 14 inches on one side and 40 inches on the other.

K—Curves are those which are bent beyond 1 in 4 but not to exceed the half-circle (diameter not less than 12 inches). Example, pane 75 inches, depth about 24 in.

L—Curves not to exceed the quarter of a circle at each side (depth of bend not less than 6 inches), the bent part not less than one-third, and the flat not more than two-thirds. Example, pane 72 inches, bend 12 inches, each side, center flat 48 inches.



ACID ETCHING

By the action of Hydrofluoric acid, or its compounds, glass surfaces may be given a frosted or semi-polished appearance in various degrees. Pleasing soft-tone effects may be obtained by acid polishing after sand blasting.

Some of the most frequently used acid etching treatments are as follows:

Stippling entire surface
Embossing entire surface
Stippling surface with one-line border and key corner
Stippling surface with two-line border and key corner
Stippling one-line border and key corner on clear background
Stippling two-line border and key corner on clear background
Stippling part of surface or base and remainder of surface clear.

BLASTING

Blasting is accomplished by blowing an abrasive, such as sand, in a stream of compressed air against the glass. The "resist" may consist of a water soluble gelatinous resin, rubber, or heavy adhesive paper, or other similar material, which is easily removed when the work is finished. Shading is accomplished by the successive removal of different portions of the "resist," the finest blasting being done last.

Various "tones" or degrees of polish removal are required for different effects in executing a design for the entire surface. So-called "carved glass" is generally produced by deep blasting.

By the "Sandaire" process, letters, figures, and the like are cut out of glass plates by blasting through the plate. Also large holes and irregular cut-outs may be "cut" out of glass plate by the blasting operation.

Some of the most frequently used sand-blasted treatments are as follows:

Sandblasting entire surface
Sandblasting surface to clear line or bevel
Sandblasting 4″ or 5″ squares on clear background
Sandblasted background with clear 4″ or 5″ squares
Letters, figures, or numerals sandblasted with clear background or sandblasted background with clear letters, figures, or numerals.

CHIPPING

One of the oldest forms of glass decoration results from coating sandblasted glass with glue, and quick drying. The glue adheres strongly to the glass and, as it dries out and contracts, it pulls chips out of the surface of the glass. Very delicate, fern-like traceries, as well as deep chipped effects, may be obtained. No two chipped plates are ever identical in pattern.

Double process is merely the result of the application of a second coat of glue to a chipped surface and the resultant pattern is much more dense and non-transparent than that of single processed chipped glass.

Some of the most frequently used chipping treatments are as follows:

Chipping entire surface
Chipping surface of glass to clear line or bevel
Chipping surface of glass to ground or clear line border
Chipping letters or numerals with clear background, or
Chipped background with clear letters or numerals.

CASH HOLES

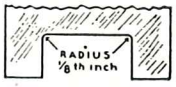
Cash, or hand, holes are cut out of the glass by drilling holes through the glass at the corners or sharp angle bends of the cut-out, when not perfectly circular, and then cutting the glass to contour in the usual way. Usually found in cashier's or teller's windows.

STANDARD TYPES OF CASH HOLES

Type "A"—
Arch Top

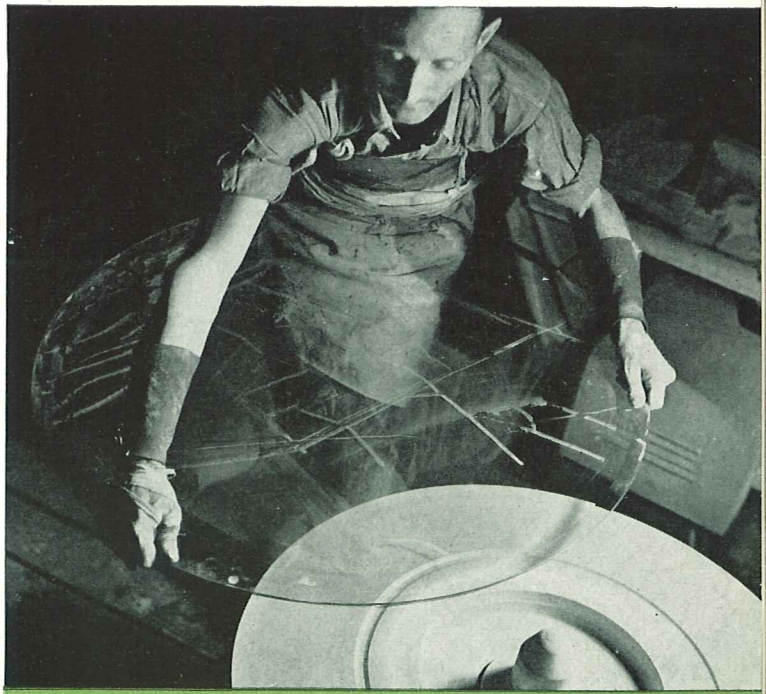
Type "B"—
Rounded Corners,
Radius over 2″

Type "C"—
Rounded Corners,
Radius 2″ or less



Type "D"—
Square Corners

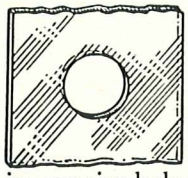
Inside edge polished and supplied in all thickness glass for any size hole up to 12″ wide or 8″ high.



Beveling of glass edges is done by skilled craftsmen.

SPEAKING HOLES

Speaking holes are cut out of the glass by drilling holes through the glass. Usually found in cashier's or teller's windows.

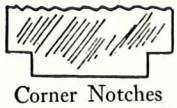


The location of the speaking hole should be even with the mouth so the voice will carry through the hole.

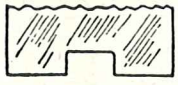
Inside edge polished and supplied in any size hole up to 5″ diameter, in all thicknesses of glass.

NOTCHES

Notches are cut out of the glass by drilling holes through the glass at the corner of the notch, then grinding to the exact size required. Supplied with either ground or polished edges, as specified, up to 3″ wide and 3″ deep.



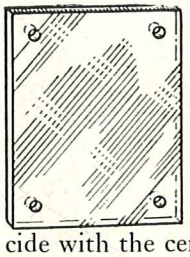
Corner Notches



Inside Notches

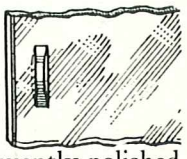
Supplied with either ground or polished edges, as specified, up to 3″ wide and 3″ deep.

DRILLING OF HOLES



This is accomplished by the use of hardened steel or alloy drills in conjunction with emery or similar abrasive. Triangular files snapped off at an angle and centered in the chuck so that the point of the broken end shall very nearly coincide with the center of the hole, make very good drills for holes up to 1″ in diameter. Holes over 1″ in diameter must be made with a special ceramic drill. Supplied ⅛″ to 6½″ diameter as specified.

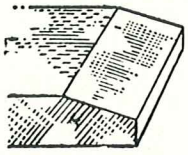
FINGER PULLS



Finger pulls are made by pressing the glass against the narrow face of small grinding wheels to the desired depth of the cut. The groove is subsequently polished.

Supplied ⅝″ wide by 3″ high.

BEVELING OF EDGES



Beveled edges are made by grinding away the surface of the glass around the edges with an abrasive wheel by moving the glass past the wheel at the desired angle. When the desired depth and angle of bevel are attained as ground surfaces, the edge is then polished with felt and rouge to restore the polished surface which has been ground away in the beveling operation.

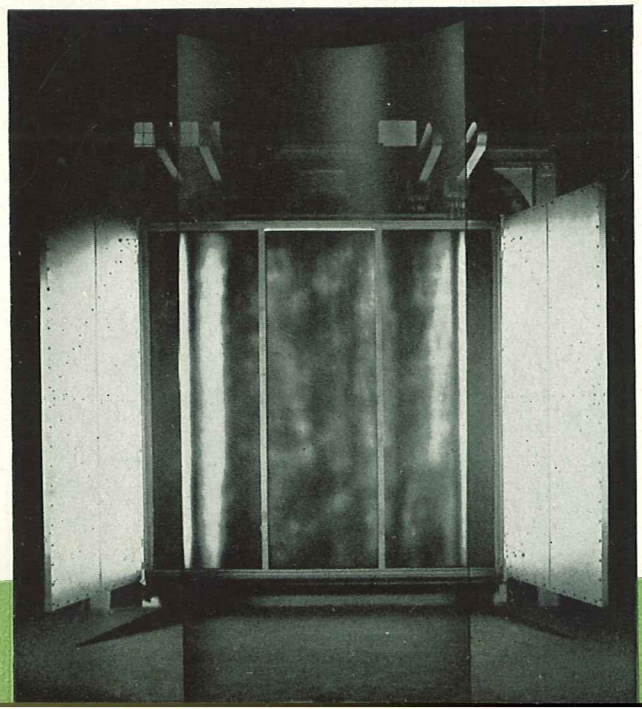
The width bevel is governed by the size of glass and the purpose intended.

Supplied in ½″, ¾″, 1″, 1¼″, 1½″, 2″, 2¼″, 2½″, 2¾″ and 3″ widths.

EDGING

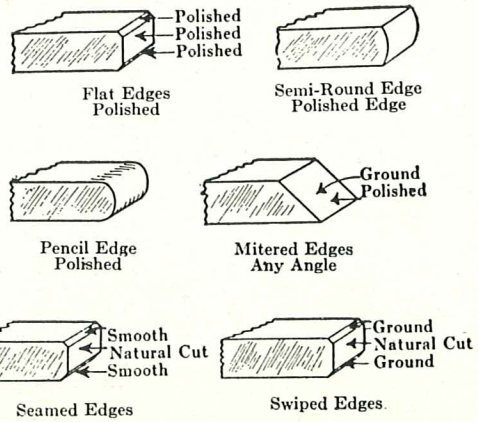
By grinding and polishing the edges of glass, the appearance is improved and the sharp edges are removed for safety. Flat, semi-rounded, penciled, seamed, and swiped are common forms for the finished edge in ground or polished finish.

Illustrated below are the standard types of edgework on flat glass. All exposed edges of glass should be processed with one of the above types or a similar treatment.



This polariscope, largest in the world, reveals the amount of strain in the light of bent photo glass placed before it.

TYPES OF EDGEWORK



ENGRAVING

Engraving is surface work customarily done with narrow face power-driven grinding wheels and, subsequently, usually polished.

Blasting and polishing is also a method used in the execution of a wide variety of intricate and beautiful designs.

"ITALIAN" PROCESSING

The application of colored paints or lacquers to designs blasted or engraved into glass surfaces.

CERAMIC ENAMELING

Plates with various colored and diffusing effects may be produced by fusing onto the surface of a glass plate a thin layer of glass of the required properties. Usually the finely powdered glass enamel is sprayed onto plate surface uniformly or through a stencil, if design is required. The enamel may also be applied through a silk screen stencil.

PHOTO ETCHING

Intricate designs and photographs may be copied onto glass, and permanently etched in the surface. These etched lines and half-tone dots may be made more visible by edge lighting, filling the lines with colors, or by silvering.

TEMPERING

This process involves heating the glass plates to a temperature of approximately 1150°F. and then chilling suddenly in a blast of air. The resulting increase in strength is dependent, in degree, on factors such as thickness of plate, rate of cooling, and uniformity of heating and cooling.

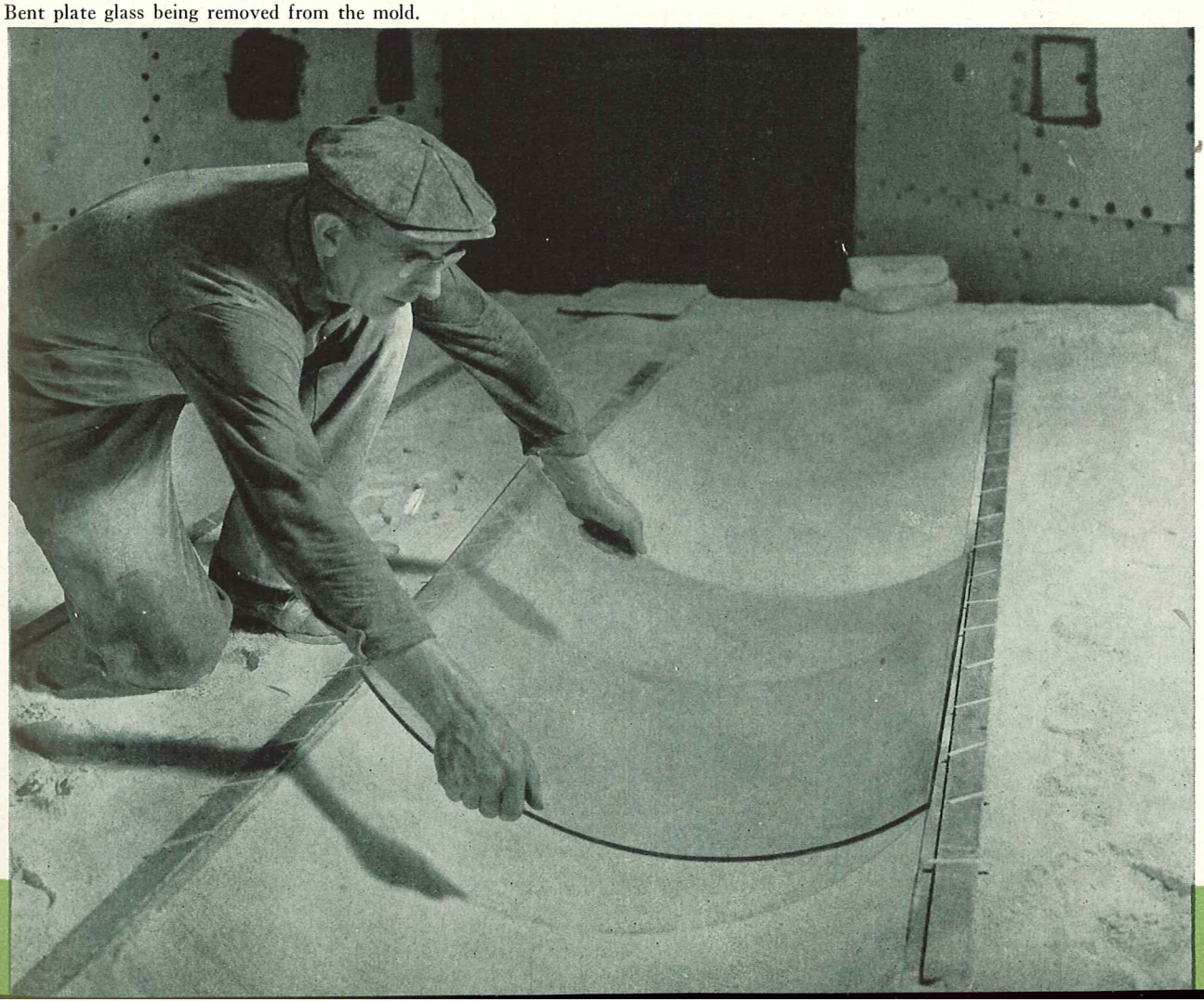
DECORATING WITH WOOD

Wood veneer may be cemented to plate glass by our safety glass laminating process, to produce a plate of fine appearance which has most of the advantages of a safety glass.

With considerably less reflectivity than a glass plate and no chance for dirt to get into the glass, this process is recommended particularly for table and desk tops. Other uses include modern framed mirrors, picture frames, serving trays, plaques, wall panels, and decorative panels.

Imitation wood effects are obtained by cementing decalcomanias to the back of the glass plates. This process is quite satisfactory in effect and durability, for many purposes.

Bent plate glass being removed from the mold.



TOOLS AND SUPPLIES

STANDARD STEEL SASH PUTTY

This product is specially made of carefully selected materials to produce a watertight job. It is easy to handle, never slides, and dries quickly after application. It will set firm and adhere to both the glass and the steel. Will prove to be an ideal putty for inside face glazing of industrial type steel sash.

Standard Colors: Natural, Red, and Gray.

Special Colors: Can be supplied on special order at an extra charge of 25 cents per CWT.

Packed: 1 pound (50 to case).
5 pounds (12 to case).
12½ pounds (4 to case).

Packed: 25 pounds (2 to case).
50 pounds (steel drum).
100 pounds (steel drum).

SPECIAL METAL CASEMENT PUTTY

Metal casements require a quick setting, uniform drying putty that will withstand all weather conditions. Our special metal casement putty is made of carefully blended ingredients and by laboratory-controlled process to meet requirements for a satisfactory job. It may be used for either outside or inside glazing work.

Standard Colors: Natural, Gray, and Black.

Special Colors: Can be supplied on special order at an extra charge of 25 cents per CWT.

Packed: 1 pound (50 to case).
5 pounds (12 to case).
12½ pounds (4 to case).

Packed: 25 pounds (2 to case).
50 pounds (steel drum).
100 pounds (steel drum).

ELASTIC GLAZING COMPOUND

For wood and metal sash. It is a modern glazing compound that remains elastic, allowing for normal contraction or expansion. It adheres to all glazing surfaces, forming a permanent, watertight bond between the glass and sash. Natural color only.

Packed: 1 pound (50 to case).
5 pounds (12 to case).
12½ pounds (4 to case).

Packed: 25 pounds (2 to case).
50 pounds (steel drum).
100 pounds (steel drum).

STRICTLY PURE WHITE LEAD PUTTY

Is made of 100% Pure Linseed Oil, Whiting, and 100% White Lead for glazing wood sash, which produces a long-wearing material. Natural color only.

Packed: 1 pound (50 to case).
5 pounds (12 to case).
12½ pounds (4 to case).

Packed: 25 pounds (2 to case).
50 pounds (steel drum).
100 pounds (steel drum).

STRICTLY PURE WOOD SASH PUTTY

Is made of 100% Pure Linseed Oil and Whiting and is a long-wearing material. Natural color only.

Packed: 1 pound (50 to case).
5 pounds (12 to case).
12½ pounds (4 to case).

Packed: 25 pounds (2 to case).
50 pounds (steel drum).
100 pounds (steel drum).

SUPERIOR GLAZIERS WOOD SASH PUTTY

Here is a super-quality putty for glazing wood sash, made especially for use where quick setting is required. It is a long-life material which works easily under the knife. Natural color only.

Packed: 1 pound (50 to case).
5 pounds (12 to case).
12½ pounds (4 to case).

Packed: 25 pounds (2 to case).
50 pounds (steel drum).
100 pounds (steel drum).

COMMERCIAL PUTTY

For general household use. Is a blend of linseed oil, putty oil, and whiting. Will be found suitable for commercial and general household use. Natural color only.

Packed: 1 pound (50 to case).
5 pounds (12 to case).
12½ pounds (4 to case).

Packed: 25 pounds (2 to case).
50 pounds (steel drum).
100 pounds (steel drum).

CAULKING COMPOUND—

Gun Grade

Pittcaulk Caulking Compound is the highest quality manufactured. It is very durable and is water and airproof. Pittcaulk Caulking Compound is so durable because it is made from nondrying oils that are treated to develop elasticity, weather resistance, and waterproof qualities. A surface drier is added so that a tough surface film develops, keeping the bulk of the compound in a gummy consistency indefinitely. This compound is not to be confused with putty as it is made from more durable oils and pigments. Pittcaulk stays elastic and pliable and will not bleed through paint.

Gun Grade is a semi-paste consistency to be forced in crack or opening by means of a pressure gun. More Gun Grade consistency is used than Knife Grade because of greater ease in application and greater speed. Forms a film in a few hours which will not shrink, sag, crack, or fall away.

One gallon will fill about 150 lineal feet of normal crack or opening. It has many uses, both exterior and interior. Use around openings in all types of structures—wood, brick, stucco, and stone, for cracks or openings that let in air or moisture, foundations, walls, attics, interior molding cracks, or wherever dirt, air, or moisture is to be sealed out. Supplied in natural color.

Packed: 1 gallon (6 to case). Packed: 5 gallons (steel drum).

PITTCAULK CAULKING COMPOUND—

Knife Grade (Bulk)

Pittcaulk Caulking Compound, Knife Grade, is made in a stiff consistency for the use of those who are accustomed to working with that type of material, or for those who need a small amount of compound to do a limited amount of work.

The Knife Grade is of the same quality and has the same durability as the Gun Grade except for a variation in the properties of pigments and oils necessary to produce a paste consistency.

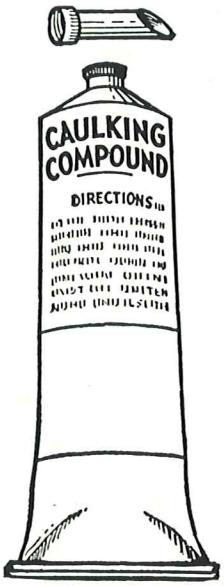
It has a puttylike consistency and smooths out easily with putty knife and will stick tightly to any clean surface without cracking, chipping, or breaking away. It will not become flint hard and brittle like putty.

It has many uses, both exterior and interior. Use around openings in all types of structures—wood, brick, stucco, and stone. For cracks or openings that let in air or moisture, or wherever dirt, air, or moisture is to be sealed out of buildings of all types. Also, it is recommended for bedding glass in greenhouse construction and repair. Because of elastic, resilient nature, our compound acts as a cushion and maintains a tight seal with the glass and reduces breakage, due to vibration, to a minimum. Supplied in natural color.

Packed: ⅛ gallon (24 to case).
¼ gallon (24 to case).
1 gallon (6 to case).

PITTCAULK CAULKING COMPOUND

in Metal Tubes



This handy metal tube contains first quality Gun Grade Pittcaulk Caulking Compound and is designed for small jobs or emergency use. Especially useful for filling cracks around doors and windows and for cracks in stucco, brick, wood, or concrete.

The tube is of soft metal and sealed with a cap so there is no possibility of leaking. A nozzle tip is supplied with each tube which can readily be screwed into place after cap has been removed.

Eliminates the necessity of using a caulking gun or the purchase of excessive quantity of caulking compound when only 12 ounces or 2 pounds are required, which is the capacity of the tubes. Supplied in natural color only.

Packed: 6 12-ounce tubes per carton; 2 cartons to case.
6 2-pound tubes per carton; 4 cartons to case.

PITTCAULK AIRTIGHT CARTRIDGES

(For use in Pittsburgh Combination Pressure Caulking Guns)

Pittcaulk Airtight Cartridges contain the best grade Caulking Compound (natural color). The cartridges fit into the gun barrel and make a full gun load without dirt, waste, or delay.

The use of Caulking Compound in cartridges is recommended for professional use and it is the easiest and most efficient method for the inexperienced user.

Advantages of Airtight Cartridge

1. Compound is always fresh. Never over one cartridge open at a time. (When you use bulk compound, the entire can must be opened.)

2. No time or material wasted with cartridge use. Just drop cartridge in gun and you are ready to caulk.

3. Gun never touches compound nor gets dirty.

4. Use compound as needed. If you have time for only a part of job, use only one cartridge and recap what you don't use. One or one hundred cartridges, there is no waste, whereas if used in bulk, the surface always cakes over and is wasted.

5. Caulking the cartridge way is as advanced over bulk use as is electricity over the kerosene lamp.

6. It is economical, clean, easy, and eliminates need of apprenticeship to get good results.

Cartridges, containing approximately 1/10 gallon each, packed 10 cartridges to carton. Equal to approximately 1 gallon of compound.

PITTCAULK NOZZLE TYPE CARTRIDGES

(For use in Pittsburgh Combination Pressure Caulking Gun)

Caulking cartridges available in Natural, Slate, Red, Green, Brown, White, and Non-Bleeding colors.

This type cartridge leaves a perfectly clean gun. Each cartridge is a complete unit with individual standard nozzle, hence no clogged gun cap, barrel, washer, or nozzles to clean. It is cleaner to use since no Caulking Compound touches the inside of the gun cap or barrel. It is easier to extract from the gun barrel because the nozzle acts as a handle, no pliers or other equipment is necessary for extracting.

Various sized nozzles for the Model L-1 G Interchangeable Gun will fit over the end of the cartridge nozzle onto the gun in case the nozzle on the cartridge is found inadequate for some particular job.

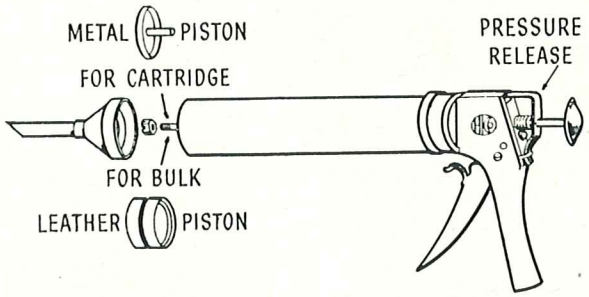
Cartridges containing 1/10 gallon each packed 10 cartridges in carton. Equal to approximately 1 gallon.

ALBION COMBINATION CAULKING GUN

MODEL DL-32-C

A real professional gun, lightweight, easy to handle, a combination gun, can be used for cartridges or bulk. Gun comes ready for use with Airtight Cartridges, but with it comes leather washers and metal disc so that the gun is easily and quickly turned into a gun for bulk use.

Rugged, all-steel construction in a bright cadmium rustproof finish insures lasting service. It is carefully balanced to reduce "wrist strain" to a minimum, and even at high pressures its operation is effortless.



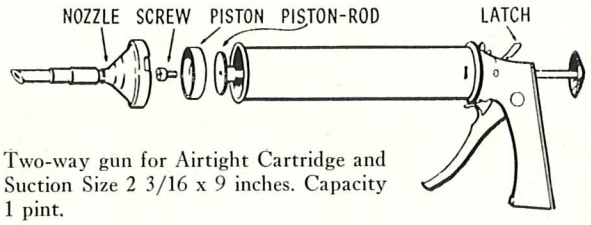
For Airtight Cartridge and Suction Size 2 3/16 x 9 inches. Capacity 1 pint.

Guns are shipped in individual cartons equipped for cartridge use. Adapters and instructions for converting it for bulk use are included with each gun.

Nozzles are threaded with U. S. Standard pipe thread, and any desired shape nozzle may be quickly formed. No. 8-A, ⅜" Round Nozzle is standard equipment with each gun. Interchangeable nozzles for every size and shape ribbon desired for above gun are available.

VITAL COMBINATION CAULKING GUN

MODEL L-1G



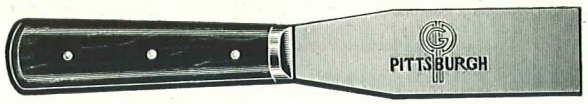
Two-way gun for Airtight Cartridge and Suction Size 2 3/16 x 9 inches. Capacity 1 pint.

Professional caulking gun. Can be used for cartridges or bulk. Lightweight and easy to handle. Guns are shipped ready for using bulk compounds. Easy to change over from bulk to cartridge use. Simply release screw and remove piston unit completely from the end of piston rod.

Rugged, all-steel construction in black enameled, rustproof finish, insures lasting service. It is carefully balanced to reduce wrist strain to a minimum, as ratchet handle permitting use in the most difficult locations and even at high pressures, its operation requires little effort. Illustrated direction folder with each gun. No. 8, ⅜" Nozzle is standard equipment with each gun.

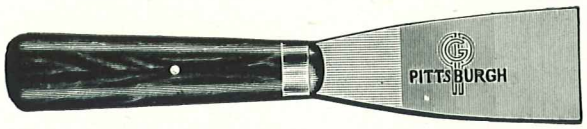
Interchangeable nozzles for every type and shape ribbon desired for above gun are available.

PUTTY KNIVES



No. P-1—High carbon cutlery steel, mirror finished, genuine Cocobolo handle, full bolster, brass rivets, are construction features worthy of note. Each blade is engraved with number and size. Available in stiff or flexible blade.

Sizes: 1¼" and 1½", one dozen in box. Weight 2 pounds.

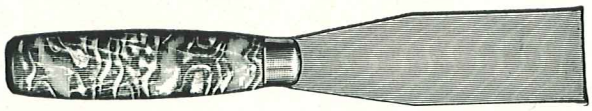


No. P-15—This is an extra heavy blade of hardened tool steel, polished and cross ground, Cocobolo handle, heavy brass ferrule, pinned through tang.

Size: 1½", one dozen in box, stiff or flexible. Weight 2 pounds.

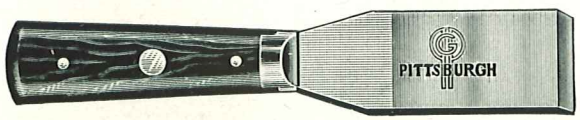
No. P-11—Here is a good tool steel knife with bolster. Comes with a genuine Cocobolo handle, supplied stiff or flexible.

Size: 1¼", one dozen in box. Weight 2 pounds 4 ounces.



No. P-102—This standard general utility putty knife is made of high carbon saw steel, semi-flex blade, deep slotted ferrule, hardwood Colofuse handle.

Size: 1¼", packed 2 dozen in display carton. Weight 3 pounds.



No. P-17—Made with an extra heavy hardened tool steel blade, polished and cross ground, no taper, Cocobolo handle of two-piece construction, lap type heavy alloy bolster, two brass rivets and one large brass saw rivet.

Size: 1¼", one dozen in box. Weight 4 pounds.

No. P-19—This knife is designed for steel sash work. Tool steel blade is ground to right "hang," Cocobolo handle, brass rivets, heavy alloy bolster make it a natural for this type of work.

Sizes: 1⅛" and 1½", one dozen in box. Weight 2 pounds 6 ounces.

GLASS CUTTERS

Glass Cutters are precision tools. If they receive proper use and care, they will last indefinitely.

Lubricate the wheel by dipping it into a light oil consisting of one part motor oil and one part kerosene.

Hold the cutter between the first two fingers, on top. Do not hold too firmly. Allow it to rest on the thumb and press gently until sufficient pressure results to make a fine hairline.

Run the cutter entirely across the glass (allow the cutting wheel to drop off pane). Start the wheel on the far side of the sheet of glass from you. Hold handle erect so that wheel will revolve easily. Make a straight, even stroke. The cut must be made continuous across the whole surface of the glass or the break will run to one side. Always break the glass immediately after cutting as once the cut gets "cold," the glass will not cut readily.

To break the glass, hold the pane firmly between the first finger and thumb with both hands (side nearest to you). Give the glass a slight bend and it will break or "run" the entire length of the cut. (Alternate method: Place end of the cutter handle or wooden match stick under end of cut on side toward you and press down on glass on each side of cut with thumb.)

For breaking off narrow strips, use the breaker in the head of cutter (different size slots for each thickness of glass). For breaking plate glass or heavy sheet glass, use glass pliers, taking pliers up to ⅛" of the cut.

Do not press too hard with cutter as it will flake or burn. A fine hairline is perfect.

No. 01 Fletcher Glass Cutter

This tool is for cutting sheet glass and other general glass cutting. It is equipped with green handle, gold tip, and standard 3/16" duo-ground wheel to provide highest cutting efficiency and long life.

Packed: 1 in box, 12 in display carton, 5 gross in case. Weight 50 pounds.

No. 06 Fletcher Glass Cutter

The 06 is designed for cutting heat-resisting glass, art glass, and all hard glass. It has the new duo-ground 3/16″ wheel. Handle is black with gold tip. For extra hard glass specify L-06.

Packed: 1 in box, 12 in display carton, 5 gross in case. Weight 50 pounds.

No. 08 Fletcher Glass Cutter

This model is designed for cutting plate, heavy laminated, and polished glass. It comes equipped with a small duo-ground wheel ⅛″ in diameter, which enables it to cut odd shapes and small arcs of circles efficiently. Green handle with gold tip.

Packed: 1 in box, 12 in display carton, 5 gross in case. Weight 50 pounds.

No. 024 Red Devil Glass Cutter

This cutter is universally used for sheet and general glass cutting. It uses No. 242 wheels.

Packed: 12 in display box, 5 gross in case. Weight 50 pounds.

No. 023 Red Devil Glass Cutter

This type of cutter is for hard, rough ribbed, cathedral glass, or where tapping is advisable. Use No. 242 wheel.

Packed: 12 in display box, 2½ gross in case. Weight 25 pounds.

No. 08 Red Devil Glass Cutter

Here is a special wheel for Carrara, stippolyte, opalescent, and extra hard glass. Uses No. 241 wheel.

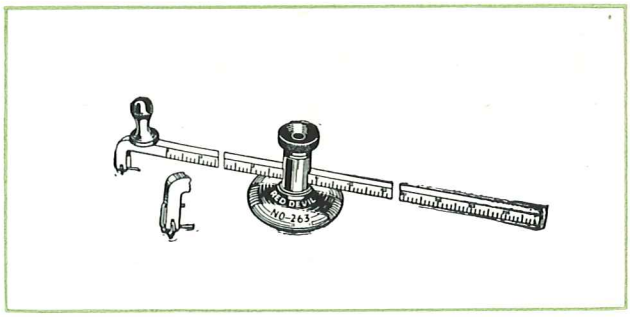
Packed: 12 in display box, 2½ gross in case. Weight 25 pounds.

No. 032 Red Devil Glass Cutter

For cutting plate, heavy laminated, and polished glass. It is exactly right for this purpose, being developed in conjunction with largest plate glass plant in the world for cutting plate glass. Large production makes low price possible. Uses No. 232 wheel and needs no breaking in.

Packed: 12 in display box, 2½ gross in case. Weight 28 pounds.

No. 263 Red Devil Circle Sweep Glass Cutter



This device makes easy work of cutting circles of plain or plate glass in diameters 2 inches to 24 inches. The metal base has suction mat to prevent slipping. Graduated steel rod is scaled in 1/16 inches. Two extra refill No. 100 wheels included.

Packed: 1 in box, 12 in carton. Weight 6 pounds.

No. 210 Red Devil Glass Pliers

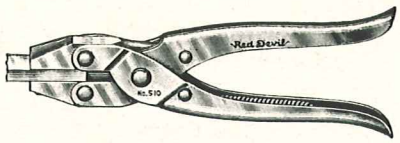
Tests with the Red Devil No. 210 will prove it to be the finest glass plier ever made. Takes the place of every plier up to 10 inch. Flat upper jaw supports top surface of glass while humped lower jaw develops powerful leverage under slight pressure from handles. It cleanly severs the glass to a line cut and takes any glass ½″ or thinner. High polish finish.

Packed: 1 in carton, 6 in box. Weight per dozen 12 pounds.

No. 410 Red Devil Glass Pliers

A popular priced plier of rugged strength and well balanced. It has the flaring wide jaws preferred by many glaziers. Full polish.

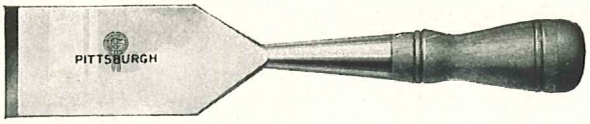
Packed: 6 in a box. Weight per dozen 10 pounds.



No. 510 Red Devil Glass Pliers

A parallel action glass plier, 8½ inches long.

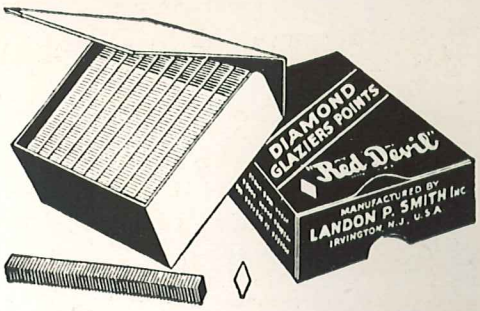
Packed: 6 in a box.



No. 452 Glaziers' Chisel

This is the standard old style, square side chisel preferred by many glaziers. Made with socket handle and highly polished steel blade. It is 10½" overall length and has a 4" wood handle.

Packed: 12 in a box. Weight per dozen 8 pounds.



Red Devil Diamond Points

Are supplied in No. 1 Red Devil Diamond Points ⅜" long for No. 1 Driver, packed 50,000 in a package, 9 packages of 5,000 (45,000) in wood boxes. Weight 9-package box, 10 pounds.

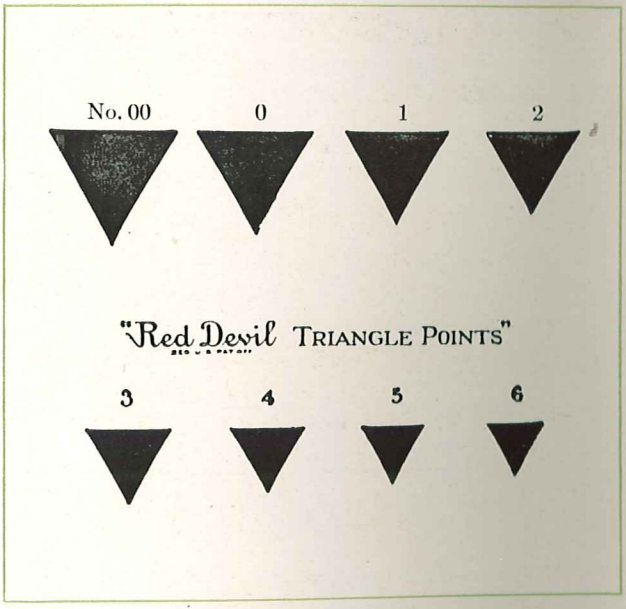
No. 2 Red Devil Diamond Points ½-inch long for No. 2 Driver, packed 4,000 in package, 9 packages of 4,000 (36,000) in wood box. Weight 9-package box, 14 pounds.

GLAZIERS' POINTS

No. 20 Red Devil Glaziers' Point Display

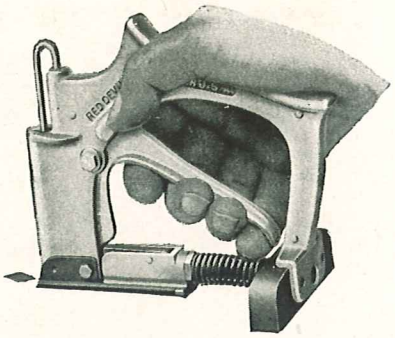
Instead of passing out triangle points in wasteful, loose quantities, it pays to display Red Devil Points in attractive 5¢ packages. Each 5¢ package contains a point setter "gadget," making it possible to drive points with any ordinary hammer or chisel.

Packed: 12 packages in counter display; 5 gross 5¢ packages in case. Weight 125 pounds.



Red Devil Triangle Points

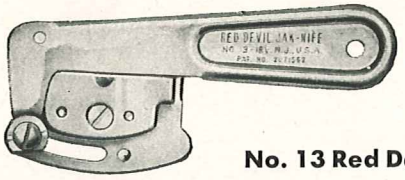
Red Devil Triangle Points are furnished in packages of ⅛-pound, ¼-pound, ½-pound, 1-pound, and also in 25-pound and 50-pound boxes, and 100-pound kegs. Sizes 00 to 4 inclusive. (See cut for standard sizes.) They are packed in strong packages and cartons with bright red labels.



Red Devil Diamond Point Driver

This device automatically glazes sash and frame, mirrors, at machine-gun speed into hardest wood. It operates from any angle and points cannot slip out. Parts are adjustable and replaceable. Its use speeds up and improves any glazing job.

No. 1 for No. 1 Diamond Points.
No. 2 for No. 2 Diamond Points.
Packed: one in carton with extra driving plate.



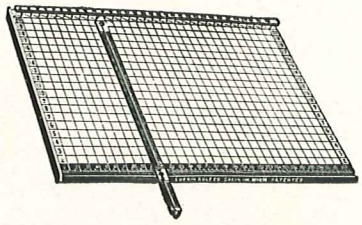
No. 13 Red Devil Jackknife

We offer a new style razor blade holder for scraping or cutting. It locks in safety position like a jackknife. Made of steel, heavily plated.

Packed: 12 in display, 2½ gross in case. Weight 90 pounds.

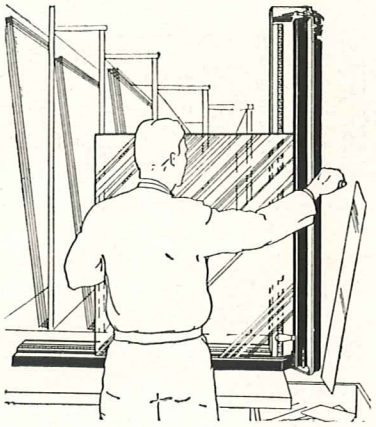
LUFKIN PERFECTION GLASS BOARDS

For cutting window glass accurately and uniformly to size. Board is made of narrow strips of well-seasoned lumber, ruled in inches both ways, embedded steel rule at front edge marked inches and eighths, top and left edges in inches. Straight edge is unique, simple and positive in operation.



Size of board 36 x 54 inches—weight 72 pounds.
Size of board 42 x 60 inches—weight 100 pounds.
Size of board 48 x 72 inches—weight 136 pounds.

MARVEL GLASS HOLDER



This device can be fastened to the shelving or wall, saving valuable space and eliminating counter difficulties.

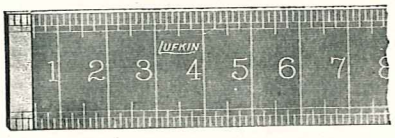
Glass is held upright when cutting and is automatically measured and squared. Removes salvage without necessity of touching with your hands. When the glass had been cut, the safety brake is pushed against the salvage, causing it to automatically fall into the scrap box.

The Marvel Glass Holder is made of the best materials. No metal touches the main pane of glass. The base and breaking edge wherein rests the main pane of glass are made of white maple. Very simple to operate. Three standard sizes:

No. 36—42″ upright and 36″ base. Upright takes 42″ glass.
No. 48—42″ upright and 48″ base. Upright takes 42″ glass.
No. 54—54″ upright and 60″ base. Upright takes 54″ glass.
Shipping weight 40 pounds.

LUFKIN GLAZIERS' RULES—

Without Lip

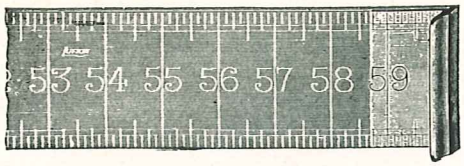


Made of selected hard maple. Both ends are brass capped, marked both sides, one side both edges consecutive inches to eighths; other side lower edge, consecutive inches to eighths, upper edge, feet and quarter feet.

Nos.	*Length*	*Dimensions*	*Weight each*
7136	36 inch	2 x ¼ inch	½ pound
7137	48 inch	2 x ¼ inch	¾ pound
7138	60 inch	2½ x ¼ inch	¾ pound
7139	72 inch	2½ x ¼ inch	1 pound
7140	84 inch	3 x ¼ inch	1 pound

LUFKIN GLASS CUTTERS' RULES—

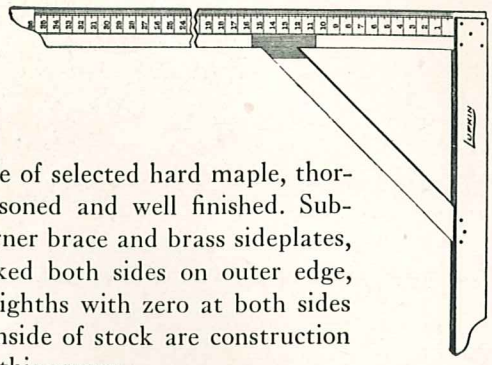
with Brass Lip



This rule is made of selected hard maple. One end is fitted with improved type substantial extruded brass lip extended ⅜ inch from flat face of rule while the other end is brass capped. Both sides are marked in consecutive inches to eighths, both edges.

Nos.	*Length*	*Dimensions*	*Weight each*
7141	36 inch	2 x 5/16 inch	¾ pound
7142	48 inch	2 x 5/16 inch	1 pound
7143	60 inch	2½ x ⅜ inch	1¼ pounds
7144	72 inch	2½ x ⅜ inch	1¾ pounds
7145	84 inch	3 x ⅜ inch	2 pounds
7146	96 inch	3 x ⅜ inch	2¼ pounds
7147	108 inch	3 x ⅜ inch	2½ pounds
7148	120 inch	3 x ⅜ inch	2¾ pounds
7149	144 inch	3 x ⅜ inch	3¼ pounds

LUFKIN GLASS CUTTERS' "L" SQUARES



Are made of selected hard maple, thoroughly seasoned and well finished. Substantial corner brace and brass sideplates, blade marked both sides on outer edge, inches to eighths with zero at both sides falling at inside of stock are construction features of this square.

Length	24"	36"	48"	60"
Blade	¼ x 2½	¼ x 3	¼ x 3	¼ x 3
Stock	13/64 x 2½	13/64 x 2½	13/64 x 2½	13/64 x 2½
Stock, length, inches	21	27	27	30
Weight each, pounds	2	2¼	3	3¾

PRODUCTS NOT LISTED

We carry a complete line of tools and supplies for the glass trade. If you are in need of products not shown on pages 82 through 89, we will be glad to send to you, upon request, additional information concerning other items we carry in stock as a service to glass shops and other large users of flat glass products.

Suggestions

FOR HANDLING AND ORDERING GLASS

1. Do not allow cases to get wet. Dampness and water may cause water marks or stains.
2. Never slide or drag one piece of glass over another. Lift each piece clear of the remainder of the case or stack. Dragging causes scratches.
3. Never place a piece of glass edgewise or flat on a stone, cement or metal floor. Stone floors, etc., may cause chips or cracks on the edges.
4. Never lay tools or extremely hard objects on a piece of glass.
5. Never stack pieces of glass in a rack without paper, cardboard or wood separators between them.
6. Always store glass in an upright position. Tops of stacks should be covered with paper to prevent dust from getting in between the glass.
7. Never slide a glass on a cutting table. When changing the position of a glass, lift it clear of the table, put one edge down in the desired position and let the other side down without sliding.
8. Keep the work table clean and free from glass chips and excessive dust. These gritty materials, if not removed, may cause scratches.
9. Always specify the kind of glass wanted.
10. When specifying sizes, the width and then the length should be indicated.
11. All orders for irregular shapes should be accompanied by a full-size paper pattern.

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